

THE

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Arizona Rural Health Provider Atlas

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appreciated.

*This book is lovingly dedicated to
my children Melissa Gail, Matthew
Seth, and Melinda Sue.*

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Preface

The Rural Health Office takes particular delight in presenting the second edition of *The Arizona Rural Health Provider Atlas*. As is noted in the Introduction, the 1987 edition is much expanded over its 1984 predecessor. The addition of new health professions, health services and health facilities all add up to a truly comprehensive resource document.

It is particularly timely that this new edition is being published as the Arizona Area Health Education Centers Program concludes its first three years of development and enters into three years of operation with Federal funding. The data contained in the *Atlas* are critical to the expansion and further development of this program.

Further, the *Atlas* complements two other Rural Health Office programs. First, the Arizona Health Provider Resources Program, which places health providers throughout the state, will benefit substantially from presentation of provider/population ratios for the various health professions. Second, the Primary Care Cooperative Agreement with the Federal government depends heavily on data relating to medically underserved areas, the National Health Service Corps and health facilities.

The generous support provided by the Flinn Foundation, and by the co-sponsors and

donors demonstrates a more general need for the information in the *Atlas*. We are grateful to each of these organizations for their assistance.

I would also like to extend special thanks to Dr. Rena Gordon and her staff, particularly Jim Walters, Virginia Walters and Joyce Loughrige for their devotion and commitment to this important project.

Andrew Nichols, M.D., M.P.H.
Professor and Director
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Other major contributors

were Leslie Stafford, assisted by Marilyn Baker, who was consulted on cartographic presentations and produced the maps. Patty Thornton-Lewis from the Division of Biomedical Communications of the Arizona Health Sciences Center supervised the layout and design of the *Atlas*, Dave Becker did the typography, Mark Pederson scheduled the project and Isbell Printing completed the printing. Lynda Bergsma of the Rural Health Office in Tucson proof read the final text.

Additional assistance was provided by Kaaren Iverson, Mary Chase, and Victoria Lee. Each contributed selected background research. Pat Fethiere, Kathy Lawless, Jack Nock and Gail Silverstein provided information on the Arizona Health Care Cost Containment System. Tom Hoffman, from the Department of Economic Security, provided two tables developed for the Aging Administration.

Staff from the Arizona Department of Health Services assisted in this project. Stan Kleiner, chief planner, reviewed and commented on nursing care institutions and home health care/hospices, and enthusiastically supported development of the *Atlas*; Lisa Hulette consulted on licensed midwives; Helen Cacheris, Sharon Sass, and Sheryl Lee on dietitians; Victor Dominguez and Doug Leach on emergency

medical technicians and ambulance services; Bonnie James on hospices; and Joanne Gersten and Cheryl Fanning on psychologists and behavioral health.

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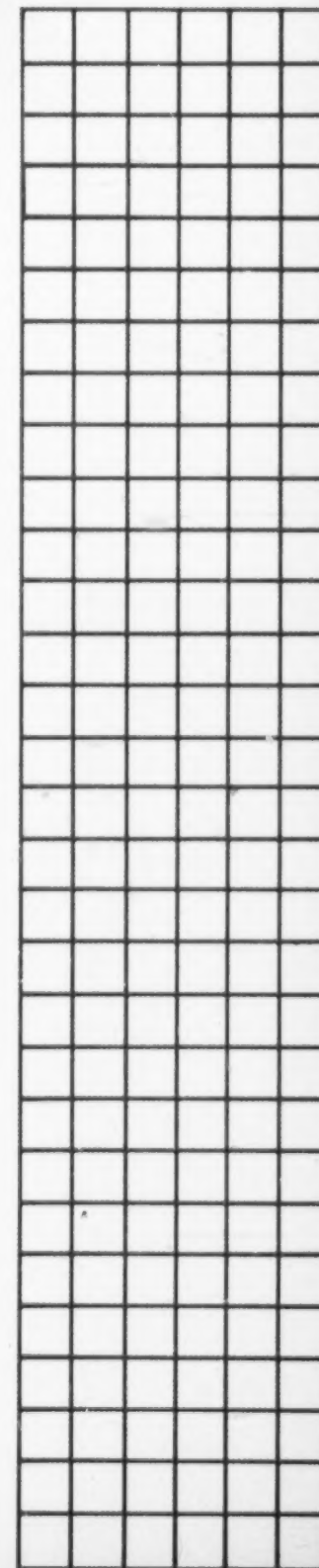


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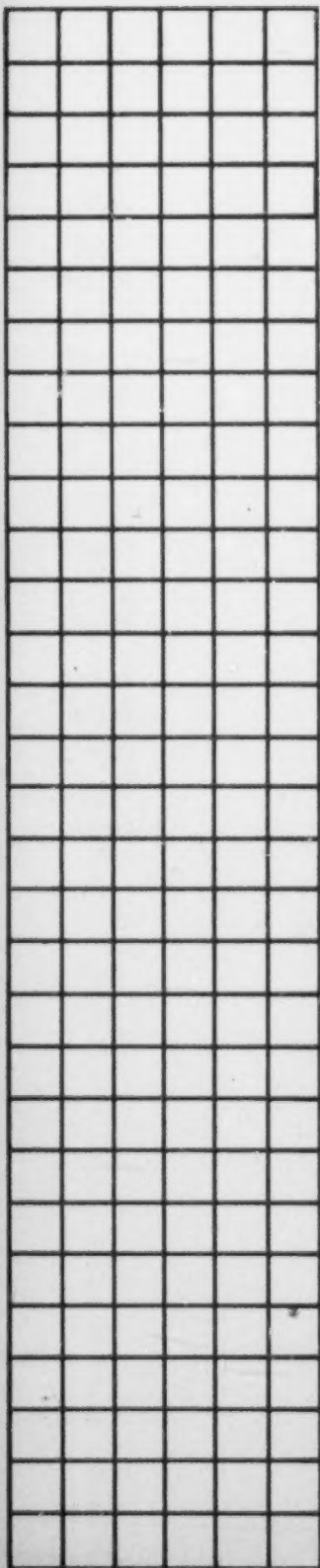
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Introduction



Introduction

Arizona is one of the fastest growing states in the nation — not only in terms of population, but in employment, personal income, housing and other economic measures. This phenomenon is a long-standing one.

For example, between 1940 and 1985, the U.S. population increased by 70% while the population in Arizona grew by more than 370%. In that same time period, employment in the U.S. grew by 133% while Arizona employment increased by more than 780%.

Given Arizona's warm, dry climate and natural beauty, all projections indicate that rapid growth will continue. It is projected that by the year 2,000 the state will be home to more than 5 million people and the Phoenix metropolitan area will have nearly as many people as the entire state has today.

Arizona will also continue to be a choice retirement spot for the elderly. U.S. projections for 1980 to the year 2,000 show that the population in the 65+ age group will increase by 37.2%. In Arizona, during the same time period, the 65+ population will increase by 109.5%.

People are going to continue coming to Arizona and we, as a state, need to plan for them. We need to provide facilities and services for these new residents or we will all suffer. This is particularly true for health services, which is one of the most impor-

tant and expensive of all services.

There are many questions regarding health care services that we as a nation, and a state, will need to ask ourselves as technological advancements continue to be made in the field of medicine. How will we take care of the people who are living longer lives than their parents did? How will we manage a health care system to provide adequate care, while keeping expenses in line? And how will we provide the elderly and the poor with health care that may not be accessible or affordable?

Arizona has a history of facing major health care deficiencies within its borders by developing innovative solutions. The state has become a testing ground for alternative health care ideas, some of which are still in their infancy. Two examples follow.

The state's 5-year-old Medicaid alternative, the Arizona Health Care Cost Containment System (AHCCCS), is one of these innovations. It is the state's attempt to take care of its own indigent by using federal Medicaid money, but relying on its own management system. Many states are looking closely to see if AHCCCS will succeed at providing adequate health care at a lower cost than traditional Medicaid programs.

The Health Service District is another Arizona innovation. In

1986, the small rural community of Ajo formed its own taxing district. This came after it was left without primary medical care services when the local mining industry withdrew much of its support. The members of this small community rose to the challenge by establishing a self-taxing mechanism to subsidize a minimum level of primary medical care.

With the goal of furthering creative thinking and solutions to the many health care service provision challenges that face the state, *The Arizona Rural Health Provider Atlas* offers baseline data from a wide variety of sources to assist in local, county and statewide health planning, administration, and evaluation. Its information may also be used by researchers, educators, health professionals, and consumers who are taking a more active role in their own health care decisions.

The first edition of *The Atlas*, published in 1984, presented in a single document a comprehensive compilation of statistics on the distribution health care professions and occupations. This second edition incorporates the same format, updating all information and adding many provider types, plus a new section on health facilities and services in an effort to keep up with the rapidly changing arena of health care in Arizona.

A change that has occurred in the state since the last atlas was published is the loss of federal support for health planning. Congress voted to repeal the federal planning statute in 1986. By the spring of 1987, the operation of the 3 largest health systems agencies (HSAs), in Flagstaff, Phoenix and Tucson, had terminated. It is anticipated that the 2 small agencies which are still viable, (Navajo HSA and Western Arizona HSA) may cease operation in the near future, pending local support.

With fewer resources committed to health planning, the need for the updated 1987 edition of *The Atlas* appears particularly important for advancing health planning and health service research in Arizona.

A Rural Atlas vs. a Statewide Atlas

Why a rural Atlas and not a statewide Atlas? The reasons include: 1. limitations on resources to produce a statewide Atlas; 2. the value in building upon the earlier edition to provide a comparative data base for trend analysis; 3. rural counties are the ones most often underserved by both health facilities and health providers; and 4. rural counties have fewer resources to help solve their

problems. It should be noted that within some urban areas there are medically underserved pockets. These shortage areas need to be addressed in a separate document.

Arizona's size, widely diverse environment and relatively sparse population density outside the two metropolitan centers create serious problems in the delivery of health care to rural residents.

Additionally, Arizona's rural areas have greater proportions of the poor, those with lower educational background, substandard housing, the elderly, the young and the unemployed. The lack of primary care health workers and services in outlying areas means lengthy trips for care, with travel costs and time lost from work compounding the burden for rural people in need of medical attention.

The problems of getting patients to primary care providers or specialists at hospitals and medical centers often keep people from seeking proper care until they are so sick that major medical intervention is required.

Health resources are generally available to meet the needs of Arizona's residents, but they could be better distributed to provide services to rural underserved areas. Shortage areas are easily identified on included maps. Planners and policy

makers could investigate areas lacking sufficient health resources so that ways may be found to remedy these shortages. *The Atlas* is a first step toward this effort.

Organization of the Atlas

The Atlas is organized into 4 sections. The first section is an introduction, the second describes the state's geography and its people, the third presents data on health care providers, and the fourth discusses the distributions of health care services and facilities in rural Arizona.

In the second section on geography and demography, information is presented in 3 perspectives: the state, the county, and the community. This format sets the stage for the rest of the document, which shows distributions by state, county, and community.

The county profile sketches are new for this edition.

The community overview lists population figures for 1980 for more than 200 communities. Estimates for 1985 and 1987, where available, are given for these same communities.

The third section contains information on health providers showing the number and distribution of most types of

licensed, registered and certified health practitioners within the state. Changes in supply and distribution from 1984 to 1987 are noted.

Information new to the 1987 edition are dietitians, ambulance services, midwives, psychologists and radiologic technologists. Also new to this edition is data on physicians participating in the AHCCCS and Medicare programs.

An expanded section on the Indian Health Service also is presented to help clarify a separate health service delivery system that has 3 administrative areas within the state.

The fourth section is totally new and includes health care services and facilities such as hospitals, nursing care institutions, home health agencies/hospices, behavioral health service sites, primary health care centers and health maintenance organizations (HMOs). Also discussed and delineated are Health Manpower Shortage Areas (HMSAs) and Medically Underserved Areas (MUAs) in Arizona. Information on the National Health Service Corps (NHSC) program and its current supply of participants in the state are also presented. Maps and tables are used throughout the different sections to help illustrate patterns and relationships.

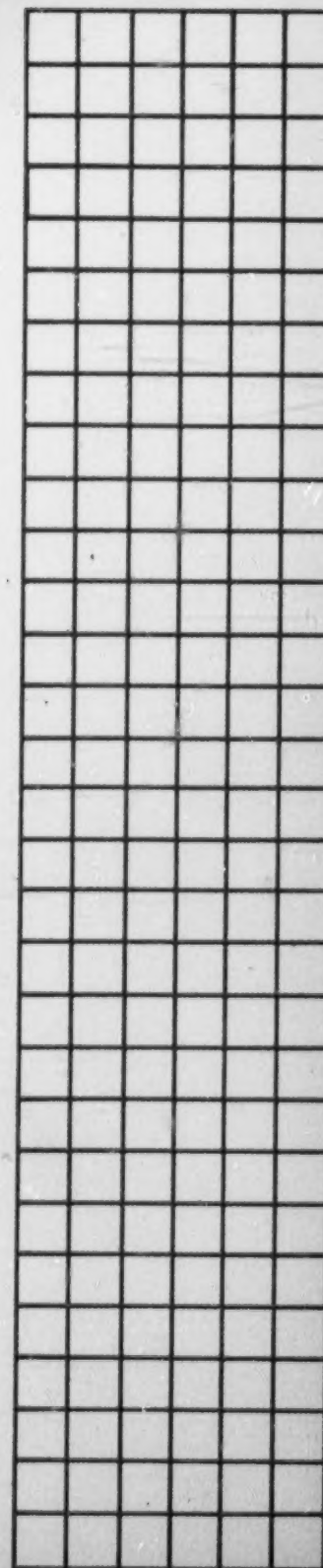
Two appendices end *The Atlas*. The first appendix is a

summary of ratios of all health care providers presented earlier. National ratios are given for each type of professional. The second appendix is a discussion and glossary of holistic health services.

Methodology

Two basic types of maps are used — county choropleth and community incidence. The choropleth maps represent the ratios of provider types per 100,000 persons for each county. Each of these maps has 3 equal ranges - low, middle and high. The ranges were derived by calculating the difference between high and low observations in each provider distribution and dividing the difference into 3 equal range intervals. While there are many acceptable ways to determine ranges, the method used appeared the most appropriate to display variations among Arizona's counties.

When reviewing providers, facilities and health services shown on tables and maps, it is important to realize that changes occur daily. Health professionals such as physicians, nurses and dentists continually come in and out of the state, or change location within the state, or leave the profession.



MAP 1

STANDARD METROPOLITAN STATISTICAL AREAS, COUNTIES AND SELECTED PLACES, ARIZONA



LEGEND

- Standard metropolitan statistical area (SMSA)
- Place of 100,000 or more inhabitants
- Place of 50,000 to 100,000 inhabitants
- Place of 25,000 to 50,000 inhabitants
- SMSA central city of fewer than 25,000 inhabitants

State capital underlined
All political boundaries are as of January 1, 1980

SCALE
0 20 40 60 80 100 Miles
0 20 40 60 80 100 Kilometers

1980 Census of Population,
Volume 1 Chapter B, Part 4,
Arizona PL80-1-B4 April 1982

The situation is almost as dynamic for health care facilities and services, which means they are constructed, opened, replaced, changed (in terms of ownership) or closed on an ongoing basis. Every effort was made to include information current at the time of publication. However, for up-to-date information, check with individual licensing boards and other sources of data listed.

Metropolitan areas, defined by the Bureau of the Census as a total population of 50,000 or more, include the central city or cities, the suburbs and satellite communities whose economic and social life are tied with the city, or cities.

This Bureau of the Census definition of a metropolitan area was used to distinguish rural from metropolitan counties. Its system designates Standard Metropolitan Statistical Areas (SMSAs) for use in publishing census data and other government statistics. SMSAs are usually defined in terms of entire counties, even though this definition is only roughly accurate in portraying the extent of major urban centers. SMSAs are commonly used in health manpower and other related literature and are useful for making comparisons of Arizona with other states and with national figures.

There are only 2 SMSAs in Arizona — Phoenix in Maricopa County and Tucson in Pima

County. The other 13 counties are categorized by the Census Bureau as non-metropolitan.

The designation of Maricopa and Pima Counties as metropolitan areas in their entirety presents a limitation. Both Maricopa and Pima Counties include extensive areas isolated from their urbanized centers. Although these areas are distinctly

rural in character, they are not specifically covered in *The Atlas*. They are included in overall data for the 2 SMSA counties. The health care needs of these areas must be analyzed separately on a community-by-community basis. Wickenburg and Gila Bend in Maricopa County and Ajo in Pima County fall into this category.

The reference format for the different types of health professions, facilities and services are presented in alphabetical sequence. For example, chiropractors precede dentists and behavioral health services precede nursing care institutions. This is consistent with the alphabetized model used in national literature, such as federal government publications on health resources statistics. The alphabetized format should make this edition easy to use as a reference source.

Geo/Demographic Characteristics

State Perspective

• The physical geography of Arizona shows a geographically large and physically diverse area. Arizona is the 6th largest of the 50 states, exceeded only by Alaska, Texas, California, Montana and New Mexico. It's 114,000 square miles (400 miles wide from north to south and 340 miles wide from east to west) make it as large as New York and the New England states combined, or as large as Italy.

Arizona has a variety of climates ranging from hot, desert valleys near sea level to cool mountains reaching as high as 12,683 feet (San Francisco Peaks in Flagstaff). High temperatures (104° is the average July temperature in Phoenix) and low rainfall in the desert valleys (less than 10 inches per year) are contrasted by regions in the Northern Plateau that bear snow cover up to 6 months of the year. It's not uncommon for Arizona's temperatures to be among the national highs and lows — sometimes in the same day. The scarcity of water accounts for the sparseness of people living outside of Phoenix and Tucson.

In general, the state can be divided into the following 3 distinct regions: the Plateau Region of the north and east; the Basin and Range Desert Region of the south and west; and the Mountain Region, located basically in the middle of the

state, which acts as a transition zone between the other 2.

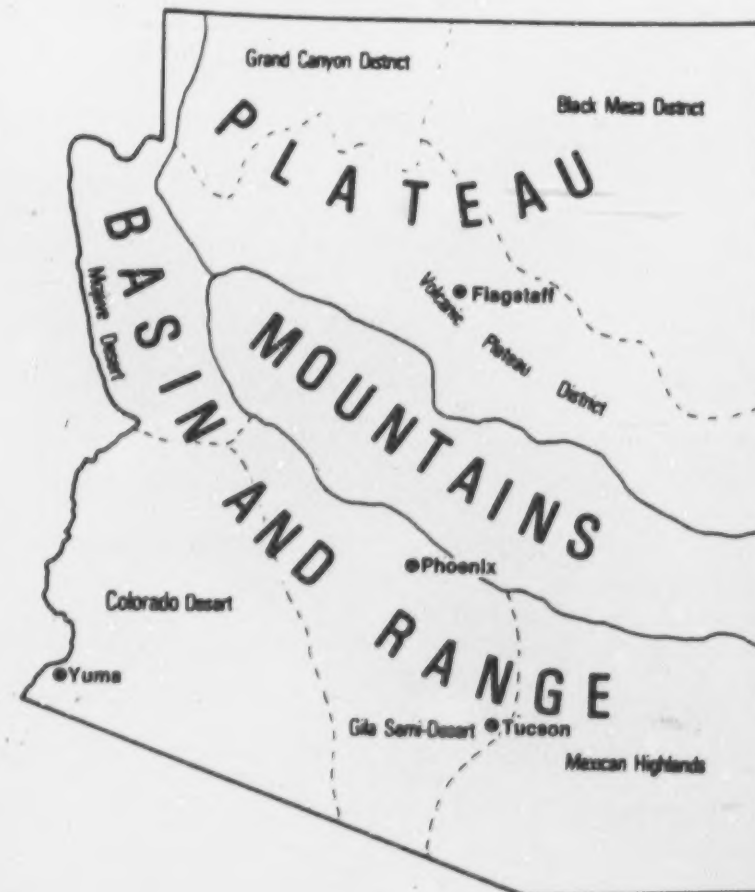
The Plateau Region is a continuation of the Colorado Plateau found in Utah, Colorado and New Mexico. Flagstaff, the only major population center of the region in Arizona with 38,247 people in 1985, is located on a broad, flat plain above 5,000 feet at the base of the San Francisco Peaks. The southern border of the Region is well-defined by the Mogollon Rim (the fabled Rim western novelist Zane Grey wrote about) which runs north-west to southeast in the northern third of the state.

The Grand Canyon virtually isolates a small area of north-western Arizona about the size of New Jersey, colloquially called "The Arizona Strip." There is only 1 road to the east of the Canyon that leads to Lee's Ferry, Page or Flagstaff. Communities in this area, such as Fredonia and Colorado City, look to Las Vegas, Nevada, and St. George, Utah, for their services.

The Basin and Range Region is an extension of the interior basin east of the Sierra Nevadas. In Arizona alone, there are more than 150 low mountain ranges running north and south throughout the Basin and Range Region. The Chiricahua Mountains, in Arizona's extreme southeastern corner, reach above 9,000 feet. In the Basin and Range Region, massive flooding can occur from severe

MAP 2

PHYSICAL REGIONS OF ARIZONA



thunderstorms or heavy spring runoff, virtually wiping out or isolating communities for days. Phoenix and Tucson are both in this Region.

The Mountain Region is made up of a series of mountains and valleys with a

diversified geological history. A system of man-made dams has been built in the Region to take advantage of excess mountain runoff. The water from the lakes formed by these dams provides much of the drinking and agricultural needs of Phoenix.

• **Population distribution and density** are affected by Arizona's physical environment. Many areas are uninhabited, reflecting harsh desert and mountain surroundings that, in many cases, are inhospitable to settlement. Land ownership and policies also play a role in population distribution.

The federal government controls more than 70% of the land — 26.7% percent in Indian Reservations and 43.5% in national forests, parks, monuments, military bases and Bureau of Land Management grazing lands.

State-owned lands total 12.3% — about 1 1/2 times the size of the state of Maryland. Most of the land is leased for agriculture or ranching enterprises. The remaining 17.5% is privately owned.

Population figures for 1980 show 75% of Arizona's 2,718,215 people were concentrated in Phoenix and Tucson. The remaining 25% of the people lived in the 13 non-metropolitan counties. The cities of Yuma, Flagstaff and Sierra Vista had populations ranging from 25,000 to close to 50,000 and there were numerous smaller incorporated cities and towns, unincorporated communities and rural settlements.

The distribution of Arizona's population in 1985 showed a similar pattern. Arizona had 3.2 million residents (27th na-

tionally) and 75% of its residents still lived in the urbanized areas of Phoenix and Tucson. This distribution is unique because all other comparably sized states have at least 3 urbanized areas.¹

What is common in other states, but absent in Arizona, is the presence of urban areas of approximately 75,000 to 200,000 residents. Areas of this size generally are large enough to support an infrastructure and a variety of trades and services. The lack of numerous small urban areas has negatively affected economic growth in rural Arizona by cutting down the options of businesses that prefer locating in smaller towns.

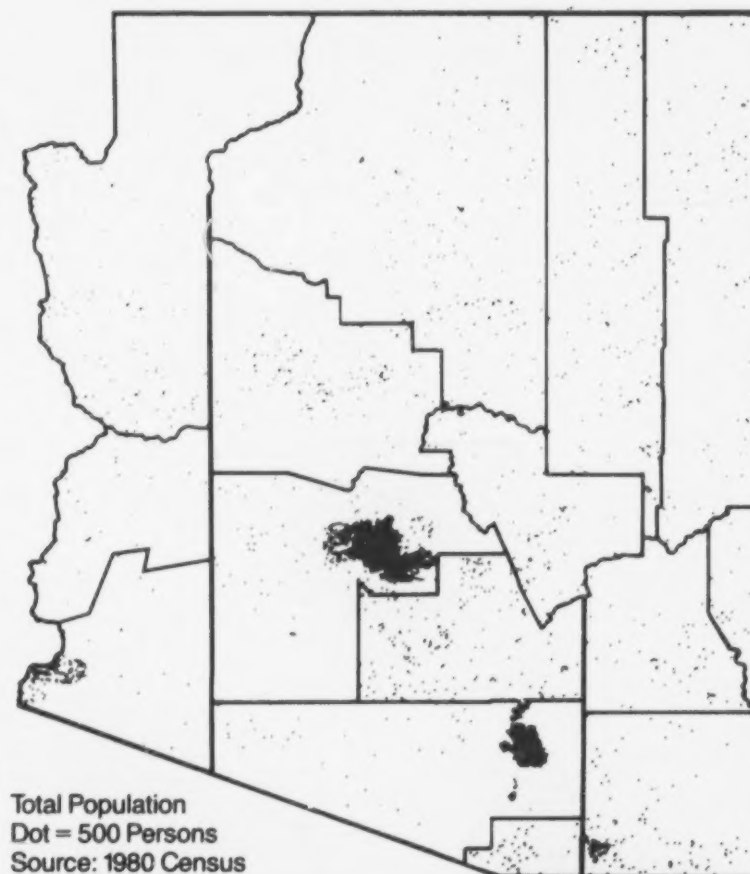
Small urban areas would promote inter-regional equity. The growth disparity in economic viability between the 13 rural and the 2 metropolitan counties in the state reflect this unique pattern of population distribution.²

The statewide population density was 23.9 per square mile in 1980 and 30.5 per square mile in 1987, compared to a density nationally of 61 per square mile. While Maricopa and Pima Counties account for 75% of the population, they occupy only 16% of the state's total land area. The density of the remaining 25% of population is very low.

Demographic elements besides population distribution and

MAP 3

ARIZONA POPULATION DISTRIBUTION



density include population size and composition, including age, race/ethnicity and economic indicators. These elements have significant implications for a health care system. For example, the presence of a large number of the young and of older adults indicates that there will be high demand for health care services because they are both high user groups.

• **Population growth** is shown in various tables in this edition. Arizona historically experienced a phenomenal 263% increase in population from 1950 to 1980. During the decade 1975-1985, Arizona ranked third nationally in population growth at nearly 40% (trailing Nevada and Alaska). From 1970 to 1980, the population increased statewide by 53%. Five counties

TABLE 1

INCREASE IN POPULATION IN ARIZONA, 1950-1980 BY COUNTY

	1950	1960	1970	1980	% Growth	
					1950-1980	1970-1980
Apache	27,767	30,438	32,304	52,108	88%	61%
Cochise	31,488	55,039	61,918	85,686	172	38
Coconino	23,910	41,857	48,326	75,008	214	55
Gila	24,158	25,745	29,255	37,080	53	27
Graham	12,985	14,045	16,578	22,862	76	38
Greenlee	12,805	11,509	10,330	11,406	- 11	10
Maricopa	331,770	663,510	971,228	1,509,262	355	55
Mohave	8,510	7,736	25,857	55,865	556	116
Navajo	29,446	37,994	47,559	67,629	130	42
Pima	141,216	265,660	351,667	531,443	276	51
Pinal	43,191	62,673	68,579	90,918	111	34
Santa Cruz	9,344	10,808	13,966	20,459	119	46
Yavapai	24,991	28,912	37,005	68,145	173	86
Yuma	28,006	46,235	60,827	90,554	223	49
State Total	749,587	1,302,161	1,775,399	2,718,215	263	53

Source: U.S. Department of Commerce, Bureau of the Census, *Number of Inhabitants, Arizona, 1980*. Table 2 Land Area and Population 1930-1980, p. 4-8 (Washington: U.S. Government Printing Office).

surpassed that figure: Mohave (116%); Yavapai (86%); Apache (61%); Coconino (55%); and Maricopa (55%). Greenlee (10%) and Gila Counties (27%) had relatively small increases.

Population projections are developed periodically by the Arizona Department of Economic Security. Their most current projections for the state, as of publication, are shown in *The Atlas*. They indicate a 43% increase over 10 years (1980-1990), a 71% increase over 15 years (1980-1995), and a

96% increase over 20 years (1980-2000).

By the year 2,000, the following 4 counties are expected to have population increases exceeding the state's projection: Maricopa (115%); Yavapai (106%); Santa Cruz (94%); and Mohave (94%).

Analysts suggest that as Phoenix becomes a larger metropolitan area, many retirees may find it too congested. A spillover of population into Mohave, Pinal and Yavapai Counties has taken place and is

expected to continue. In particular, Yavapai County has attracted a fairly large retirement-related population. It has a more moderate temperature range, it is less crowded and is only an hour drive to Phoenix.

Big population increases in Santa Cruz County are expected because of its expanded economy. In contrast Greenlee County, hard-hit by copper mining shutdowns and layoffs, is expected to lose 20% of its population by the year 2,000.

• Age distribution is displayed in a table showing population by age, 1980-2,000, for the United States and Arizona. By the year 2,000, the U.S. population is expected to increase by 18.1% and the Arizona population by 95.8%. The greatest gains by age groups are expected in the 35-54 range (66% U.S. vs. 171.7% in Arizona) and in the 65+ group (37.2% U.S. vs. 109.5% in Arizona).

Unlike the U.S., Arizona's projected increase for Ages 0-4 (85.1%), 5-9 (97.9%) and 10-14 (95.2%) are also considerable. Arizona expects population increases distributed across all age groups — young, middle aged and elderly. It is this increase in the elderly age group that will challenge the state's economy and its ability to provide needed services.

Arizona is expected to be among those states with the highest percent increase in population aged 65+. This reflects the fact that Arizona has had a long history as a haven for winter visitors and it has now become a place where many of those visitors choose to retire.

Arizona's elderly population is growing larger and also growing older. People are living longer lives here, as elsewhere in the nation, because of medical advances that result in declining death rates from conditions such as heart attacks and strokes.

Projections suggest that the percentage increase of elderly population (86.8%) will continue to surpass the national percentage (23.5%) through the year 2010. As noted by Charles I. Schottland, chairman of the Governor's Advisory Council on Aging, the importance of such growth cannot be overestimated. Arizona must increase its programs and services to make it possible for Arizona's elderly to attain a more satisfactory and happier old age.

• **Racial and ethnic composition** of Arizona's people is diverse, reflecting the ethnic tradition of the "rugged" southwest mixed with various "European" cultures.

Racial composition in Arizona is predominantly white (82.4%). The percentage of white residents by county ranges from 23% in Apache County to 96% in Yavapai County. Approximately 85% of the 2 metropolitan counties, Maricopa and Pima Counties, are white.

Indians from the state's 20 tribes comprise the next largest racial group — 5.6% of the population total. Arizona boasts the second largest Indian population in the United States, surpassed only by Oklahoma. Approximately half of the Navajo tribe (who live on the largest reservation in the U.S.) are located in northeastern Arizona. The rest of the Navajos live on portions of the reservation that are in the neighboring states of New

Mexico and Utah.

From its earliest history, Arizona has been home to large numbers of people of Spanish heritage. Spanish and Mexican traditions play a strong cultural role in the state. People of Spanish heritage — who may be of any race — currently comprise 16.2% of the state's population. Most of these are of Mexican-American rather than Hispanic descent.

Only 2.8% of the state population is black. The highest concentrations of blacks reside in the following counties: Maricopa (3.2%), Cochise (3.7%) and Pinal (3.3%). Blacks comprise 2.9% of the Pima County population, approximately the statewide average.

The balance of Arizona's racial make-up is 0.8% Oriental and 8.4% of all other races combined.

The state ranks 17th among the 50 states in non-white population (17.6% compared with 16.9% for the U.S.). Within the category of non-white population, Arizona differs significantly from the national profile in 1980.

Arizona is only 2.8% black, compared with 11.7% for the U.S. The state ranks 35th among other states. In Indian population, Arizona ranks 4th with a state proportion of 5.6% compared with 0.6% nationally. For Spanish heritage, the state ranks 4th with a Hispanic population at 16.2% compared with only 6.4% nationally. Arizona

also ranks 15th in proportion of Orientals, with just more than half the national percentage, 0.8% versus 1.5%.

• **Economic indicators** in Arizona during the past decade have been some of the most dynamic in the country. Growth has occurred across most economic sectors, spurred on by steady population increases and a stabilizing economy characterized by lower interest rates.

The state ranked 1st in growth of personal income 1975-1985, with an overall increase of 231%. The state also was 1st in growth for non-farm wage and salary employment, reporting gains of more than 75%.

Personal and per capita income rose steadily, too. Between 1975 and 1985, the state's personal income total rose from \$12 billion to \$39 billion. Per capita income more than doubled, increasing from \$5,215 per year to \$12,454 — an increase of \$7,239. The resulting annual-gain-over-previous-year rose from \$163 in 1975 to \$1,085 in 1984, then dropped back to \$632 the following year.

Median family income in Arizona was \$19,017 in 1980. Amid affluence there remain pockets of the economically disadvantaged. Estimates of the percent of people in poverty for 1987 place the current percentage at 12.4% of the state population. This group is expected to increase to 12.7% in 1988. Females will account for more

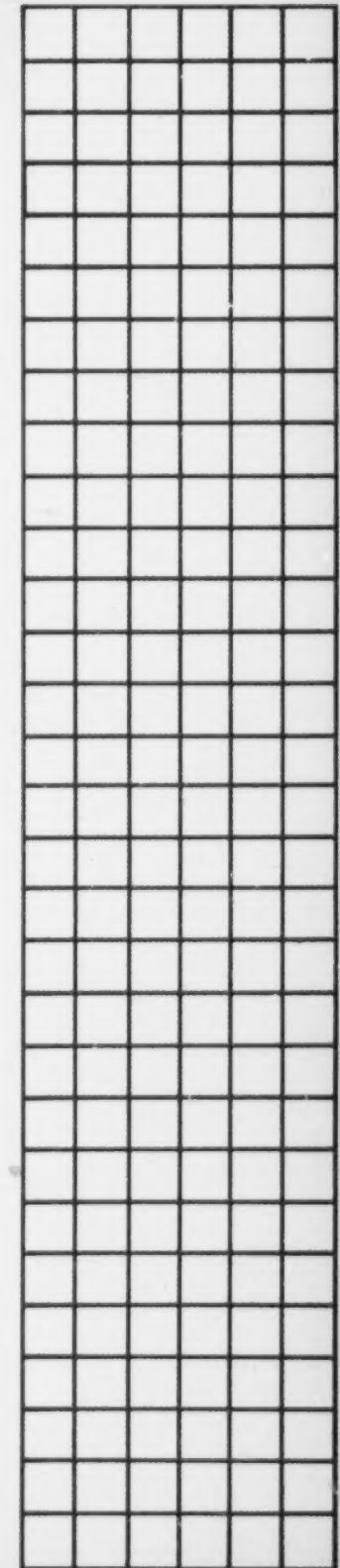
than 55% of these totals each year.

Historically, Arizona's employment has centered around the "Four Cs" — Copper, Cattle, Cotton and Citrus. Recent decades, however, have witnessed growth in manufacturing, tourism, retail and wholesale trade and service industries. Temporary construction job losses of 2.6% in 1987 will be offset by a forecasted growth of nearly 4% in 1988.

The percent of total state employment in Arizona's 13 non-metropolitan counties has deteriorated over the years. For example, in 1950, metropolitan Phoenix and Tucson accounted for 65% of the state's employment. The remaining 35% was in the non-metropolitan counties. By 1985, the non-metropolitan counties had only 16% of the state's employment and this deteriorating trend seems likely to continue.

Rural counties in the mining areas of the state are expected to lose about 2,700 more workers by 1988, continuing the long-standing depression in copper mining and smelting caused by intense competition and low copper prices in the international markets. The downtrend in the copper industry is expected to continue in Arizona for several years, seriously affecting employment rates and services in mining communities of the rural areas.

Overall, Arizona's economic future looks bright, with occa-



sional downturns. Strong growth in 1986 will become more modest in the balance of the decade. An unemployment rate of 6.5% is expected for the state, followed by a drop in 1988 and beyond. Growth is expected to exceed most of the states in the nation and sustain itself in the balance of the decade.

¹ Rex, Arizona State University Center for Business Research, *Arizona Business*, Vol. 34, No. 8, August, 1987, p. 6.

² Ibid.

TABLE 2

INCREASE IN PROJECTED POPULATION IN ARIZONA, 1980-2000 BY COUNTY

	1980 ¹	1986 ²	1987 ²	1988 ²
Counties Without an SMSA				
Apache	52,108	60,500	62,400	64,400
Cochise	85,686	97,600	100,300	102,400
Coconino	75,008	89,000	91,900	94,800
Gila	37,080	39,700	40,100	40,500
Graham	22,862	24,500	24,700	24,800
Greenlee	11,406	9,600	9,600	9,500
La Paz	12,557	14,100	14,200	14,300
Mohave	55,865	77,400	79,300	81,400
Navajo	67,629	74,000	75,700	77,600
Pinal	90,918	103,800	107,200	110,300
Santa Cruz	20,459	27,500	29,200	30,200
Yavapai	68,145	91,700	95,000	98,000
Yuma	76,205	87,900	89,500	91,400
	675,928	797,300	819,100	839,600
Counties With an SMSA				
Maricopa	1,509,262	1,911,600	1,990,800	2,069,400
Pima	531,443	643,000	659,100	685,300
	2,040,705	2,554,600	2,649,900	2,754,700
% of total	75.0	76.0	76.0	77.0
Arizona Total =	2,716,633	3,351,900	3,469,000	3,594,300

¹ Arizona Department of Economic Security, Population Statistics Unit, Table D-2: 1980 Census and Revised 1981 to 1985 Estimates for Arizona Counties. *A Demographic Guide to Arizona 1985*, Report No. 14, August, 1986, p. 66.

² Arizona Department of Economic Security, Population Statistics Unit, Table 1: Arizona Population Projections — Counties and Places 1986-2035. Projections approved by Population Technical Advisory Committee, December, 1986.

1989 ²	1990 ²	1995 ²	2000 ²	% change over 10 years	% change over 15 years	% change over 20 years
66,400	68,500	77,000	84,200	31	48	62
104,600	106,900	118,900	129,000	25	39	50
97,700	100,700	115,400	129,100	34	54	72
41,000	41,500	43,700	45,800	12	18	23
25,100	25,200	25,900	26,300	10	13	15
9,500	9,500	9,300	9,100	17	18	-20
14,500	14,600	15,400	16,100	16	23	28
83,600	85,800	97,000	108,400	54	74	94
79,500	81,200	91,100	98,600	20	35	46
113,100	116,300	132,900	149,100	28	46	64
30,900	31,700	35,800	39,800	55	75	94
101,000	104,200	120,600	140,200	53	77	106
93,300	95,400	107,000	118,800	25	40	56
860,200	881,500	990,000	1,094,500	30	46	62
2,152,000	2,262,100	2,791,500	3,252,400	50	85	115
711,000	734,800	853,000	973,700	38	60	83
2,863,000	2,996,900	3,644,500	4,226,100	47	79	107
77.0	77.0	79.0	79.0			
3,723,200	3,878,400	4,634,500	5,320,600	43	71	96

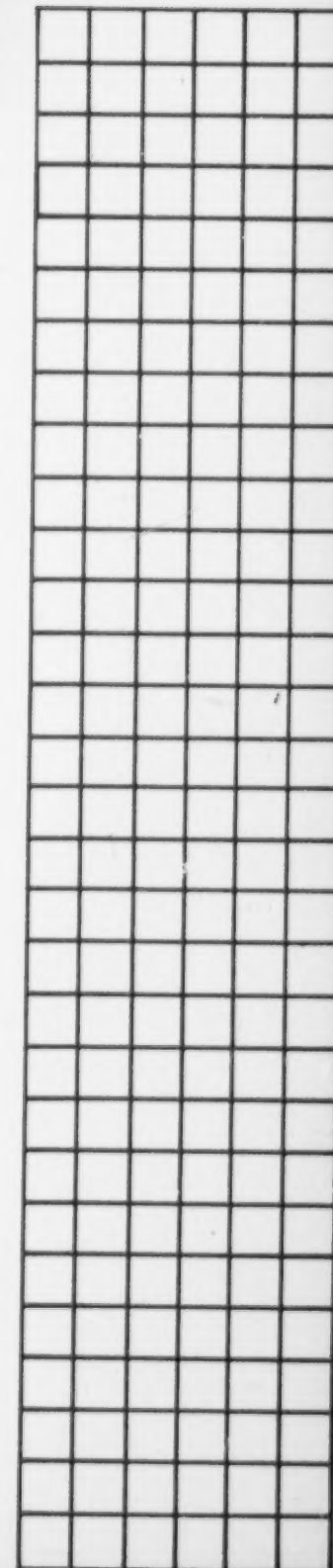


TABLE 3

PROJECTED INCREASE IN POPULATION BY AGE UNITED STATES & ARIZONA, 1980 - 2000

Age	U.S. Population		Increase		Age	Arizona Population		Increase	
	1980	2000	Amount	Percent		1980	2000	Amount	Percent
0-4	16,344,400	17,624,000	1,279,600	7.8%	0-4	214,100	396,271	182,171	85.1%
5-9	16,697,100	18,757,500	2,060,400	12.3%	5-9	211,200	417,981	206,781	97.9%
10-14	18,240,900	19,518,600	1,277,700	7.0%	10-14	219,600	428,573	208,973	95.2%
15-19	21,161,700	18,887,700	(2,274,000)	-10.7%	15-19	252,000	396,725	144,725	57.4%
20-24	21,312,600	16,910,400	(4,402,200)	-20.7%	20-24	263,800	346,477	82,677	31.3%
25-34	37,075,700	36,206,300	(869,400)	-2.3%	25-34	444,000	774,517	330,517	74.4%
35-54	48,428,600	80,741,800	32,313,200	66.7%	35-54	549,800	1,493,865	944,065	171.7%
55-59	11,614,100	13,284,700	1,670,600	14.4%	55-59	132,300	224,644	92,344	69.8%
60-64	10,085,700	10,494,300	408,600	4.1%	60-64	124,000	198,416	74,416	60.0%
65+	25,544,000	35,036,100	9,492,100	37.2%	65+	307,100	643,406	336,306	109.5%
TOTAL	226,504,800	267,461,400	40,956,600	18.1%	TOTAL	2,717,900	5,320,875	2,602,975	95.8%

Note:

1. U.S. Population from Provisional Projections of the Population of States, by Age & Sex: 1980 to 2000 Table 2, (Series P-25, No. 937).
2. Arizona Population 1980, Table 4, (Series P-25, No. 937).
3. Arizona Population 2000, from D.E.S. Baseline Projections Table 4-A, 12/12/86.

TABLE 4

INCREASE IN PROJECTED POPULATION 65 YEARS AND OLDER UNITED STATES AND ARIZONA, 1980 - 2010

Year	U.S. Total	65+ Years	Percent 65+	% Pop Increase 10 Years	% Pop Increase 20 Years	Year	Arizona Total	65+ Years	Percent 65+	% Pop Increase 10 Years	% Pop Increase 20 Years
1980	226,505,000	25,544,000	11.3%			1980	2,717,900	307,100	11.3%		
1990	249,731,000	31,799,000	12.7%	24.5%		1987	3,468,908	421,074	12.1%		
2000	267,990,000	35,036,000	13.1%	10.2%	37.2%	1990	3,878,612	473,376	12.2%	54.1%	
2010	283,141,000	39,269,000	13.9%	12.1%	23.5%	2000	5,320,875	643,406	12.1%	35.9%	109.5%
						2010	6,668,654	884,235	13.3%	37.4%	86.8%

Note:

1. U. S. population (Population Estimates & Projections, Table 1, Series P-23, No. 128, Sept. 1983).

2. Arizona 1980 population from Provisional Projections of the Populations of States, by Age & Sex: 1980 to 2000, Table 4 (Series P-25, No. 937), and Arizona 1987 to 2010 population from (Arizona Department of Economic Security, Baseline Projections, 12/12/86).

3. The decline in the rate of growth of the 65+ population in the last part of the century is a result of the low birth rate of the depression era age cohort.

4. After 2010, both the U.S. and Arizona will experience a rapid growth in the 65+ population with the aging of the "Baby Boom" age cohort.

County Perspective

COUNTY PROFILE SKETCHES

Apache County

Area Size: 11,211 sq. miles¹
Land Ownership: Reservations (65%); Government (20%); Private (15%)²
Leading Industries: Government; Lumber; Tourism; Livestock³
1987 Population: 62,400⁴
Population Density: 5.6 per sq. mile⁵
Age: 19 and under (48%); 65+ (6%)⁶
Race/Ethnic: Indian (75%); White (23%); Spanish Heritage (3.8%)⁷
Income: \$4,169.00 per capita⁸
Unemployment: 21.3%⁹
Percent in Poverty: 35.5%¹⁰
Trends: The economic base is expanding due to power plant construction and growth in the transportation and communications industries that exceeded state growth rates. Tourism has also sustained continuing moderate growth. The unemployment rate is one of the state's highest, despite recent declines, and the percentage of people in poverty is the state's worst. A large portion of service employment is created by the Navajo Indian Tribe.¹¹

Cochise County

Area Size: 6,218 sq. miles
Land Ownership: Government (54%); Private (43%)
Leading Industries: Agriculture; Tourism; Military Installations
1987 Population: 100,300
Population Density: 16.1 per sq. mile
Age: 19 and under (32%); 65+ (12%)
Race/Ethnic: White (87%); Spanish Heritage (27%)
Income: \$7,471.00 per capita
Unemployment: 9.2%
Percent in Poverty: 11.8%
Trends: The unemployment rate declined from 7.9 in 1985 to 7.6 in 1986 while the labor force increased by 3,000. Major growth is occurring in the transportation and communications sectors, particularly in Sierra Vista and surrounding areas.

Coconino County

Area Size: 18,608 sq. miles
Land Ownership: Reservation (45%); Government (42%); Private (6%)
Leading Industries: Tourism; Lumber; Ranching; Government
1987 Population: 91,900
Population Density: 4.9 per sq. mile
Age: 19 and under (36%); 65+ (5%)
Race/Ethnic: White (67%); Indian (28%); Spanish Heritage (10%)
Income: \$6,970.00 per capita
Unemployment: 10.0%
Percent in Poverty: 35.2%

Trends: Tourism is strong and will continue to expand, bringing growth in trade and services. Declines in construction employment have resulted from completion of large projects, but government will help to sustain employment opportunities.

Gila County

Area Size: 4,752 sq. miles
Land Ownership: Government (59%); Reservation (37%); Private (4%)
Leading Industries: Copper; Ranching; Lumber; Tourism
1987 Population: 40,100
Population Density: 8.4 per sq. mile
Age: 19 and under (33%); 65+ (16%)
Race/Ethnic: White (81%); Indian (14%); Spanish Heritage (21%)
Income: \$6,540.00 per capita
Unemployment: 12.4%
Percent in Poverty: 11.8% (combined with Pinal County)
Trends: Historically dependent on copper mining and smelting, Gila County has had a 60% drop in annual average employment between 1982 and 1986. This severe decline is a result of serious, long-term depression in the copper industry. However, tourism in the north continues to offer service employment.

Graham County

Area Size: 4,630 sq. miles
Land Ownership: Government (57%); Reservation (37%); Private (6%)
Leading Industries: Farming/Ranching; Tourism; Recreation
1987 Population: 24,700
Population Density: 5.3 per sq. mile
Age: 19 and under (36%); 65+ (12%)
Race/Ethnic: White (75%); Indian (12%); Spanish Heritage (24%)
Income: \$5,363.00 per capita
Unemployment: 10%
Percent in Poverty: 12%
Trends: Graham County's population growth (18%) has been slow over the past decade. All areas of the county's economy are below state growth levels, but employment should be stable in agriculture and tourism. The county also serves as a trade center for surrounding mining areas.

Greenlee County

Area Size: 1,837 sq. miles
Land Ownership: Government (90%); Private (10%)
Leading Industries: Copper; Ranching; Tourism
1987 Population: 9,600
Population Density: 5.2 per sq. mile

Age: 19 and under (39%); 65+ (8%)
Race/Ethnic: White (82%); Indian (3%); Spanish Heritage (48%)
Income: \$6,475.00 per capita
Unemployment: 7.8%
Percent in Poverty: 6.8%

Trends: Major employment declines, due to the lagging copper industry, accounted for 66% of non-agricultural employment prior to 1982. Unemployment peaked at 66.9% in July of 1982 and dropped to 7.8% by June 1987. The workforce dropped from 5,525 to 3,200 during the same time period. County experienced the second biggest population drop in the country. Current job opportunities are in construction and manufacturing. Recovery of the copper industry and diversification are the key factors to economic growth in the area.

La Paz County

Area Size: 4,484 sq. miles
Land Ownership: Government (64%); Private (10%); Reservation (8%)
Leading Industries: Tourism; Agriculture; Light Manufacturing
1987 Population: 14,200
Population Density: 3.2 per sq. mile
Age: 19 and under (32%); 65+ (18%)
Race/Ethnic: White (83%); Indian (14%); Spanish Heritage (21%)
Income: \$6,813.00 per capita
Unemployment: 8.4%

Percent in Poverty: 9.2% (combined with Mohave County)
Trends: There were small increases in wage and salary employment, but the overall level of employment has dropped. The economic base is primarily tourist/recreation related, but agriculture continues to create employment. Future economic growth will depend heavily on recreational development along the Colorado River.

Mohave County

Area Size: 13,285 sq. miles
Land Ownership: Government (57%); Private (20%); Reservation (6%)
Leading Industries: Tourism; Recreation; Mining; Manufacturing
1987 Population: 79,300
Population Density: 6.0 per sq. mile
Age: 19 and under (28%); 65+ (18%)
Race/Ethnic: White (96%); Indian (2.6%); Spanish Heritage (4%)
Income: \$7,908.00 per capita
Unemployment: 8.3%

Percent in Poverty: 9.2% (combined with La Paz County)
Trends: The county's economic growth rate exceeded the state during the past decade. Expansion of trade and government was strong, reflecting a 10-year population increase of more than 6%. Its role as a tourist and retirement

area will increase with development along the Colorado River and expansion of gaming and recreational centers in Nevada. The economic outlook is bright.

Navajo County

Area Size: 9,955 sq. miles
Land Ownership: Reservations (54%); Private (30%); Government (16%)
Leading Industries: Tourism; Ranching; Lumber; Coal Mining
1987 Population: 75,700
Population Density: 7.6 per sq. mile
Age: 19 and under (44%); 65+ (7%)
Race/Ethnic: White (49%); Indian (48%); Spanish Heritage (7%)
Income: \$5,404.00 per capita
Unemployment: 15.8%
Percent in Poverty: 9.8%

Trends: The unemployment rate declined in 1985-1986 as a result of growth in tourism and related services. Trade, mining, manufacturing and power plant construction have also contributed to employment. Further growth will occur if new industry comes into the area.

Pinal County

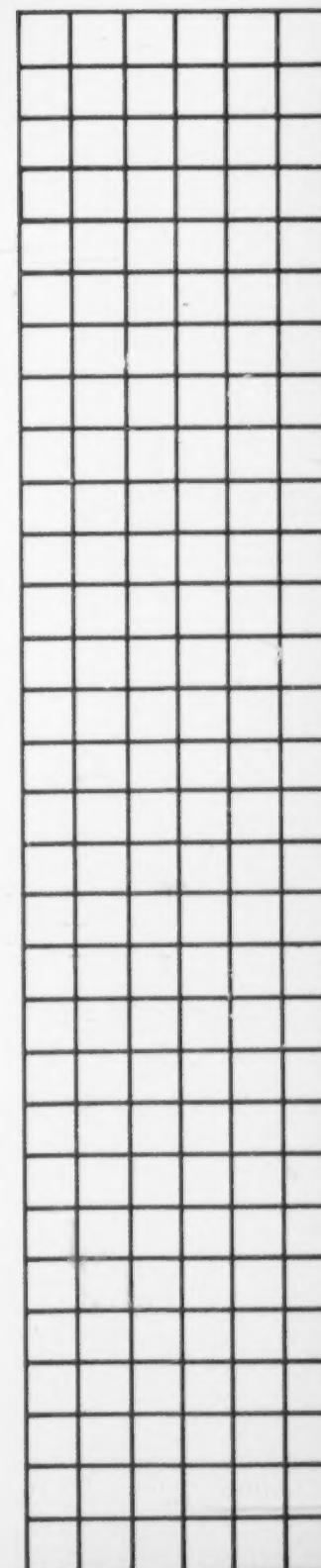
Area Size: 5,343 sq. miles
Land Ownership: Government (58%); Reservation (22%); Private (20%)
Leading Industries: Agriculture; Ranching; Copper; Tourism
1987 Population: 107,200
Population Density: 20.0 per sq. mile
Age: 19 and under (35%); 65+ (13%)
Race/Ethnic: White (68%); Indian (10%); Spanish Heritage (30%)
Income: \$6,303.00 per capita
Unemployment: 12.5%

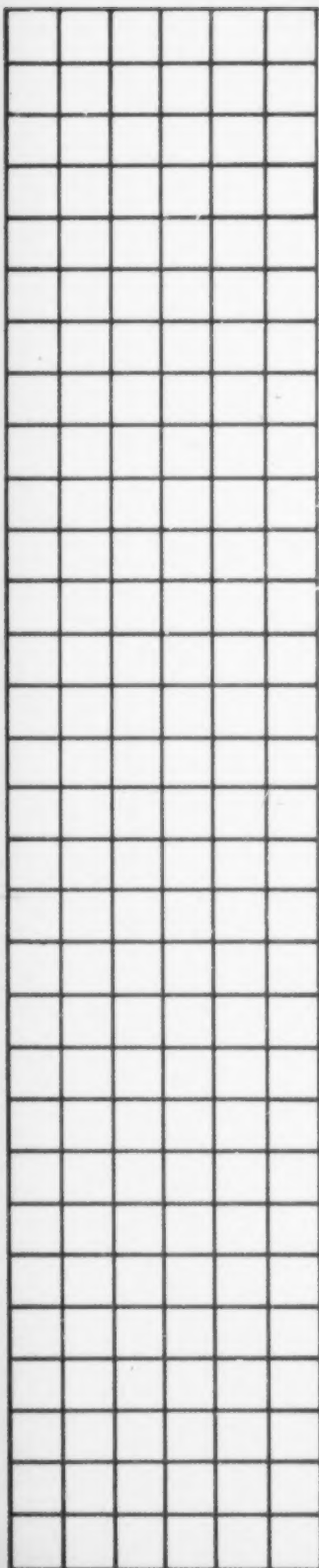
Percent in Poverty: 11.8% (combined with Gila County)
Trends: Historically dependent on copper, the area lost more than 4,000 jobs during the past 4 years. Now, employment opportunities are developing in a mix of manufacturing, trade, construction and a major expansion of the state prison complex. Continued diversification will mean economic growth.

Santa Cruz County

Area Size: 1,238 sq. miles
Land Ownership: Government (69%); Private (39%)
Leading Industries: Trade; Tourism; Ranching
1987 Population: 29,200
Population Density: 23.6 per sq. mile
Age: 19 and under (39%); 65+ (9%)
Race/Ethnic: White (81%); Spanish Heritage (75%)

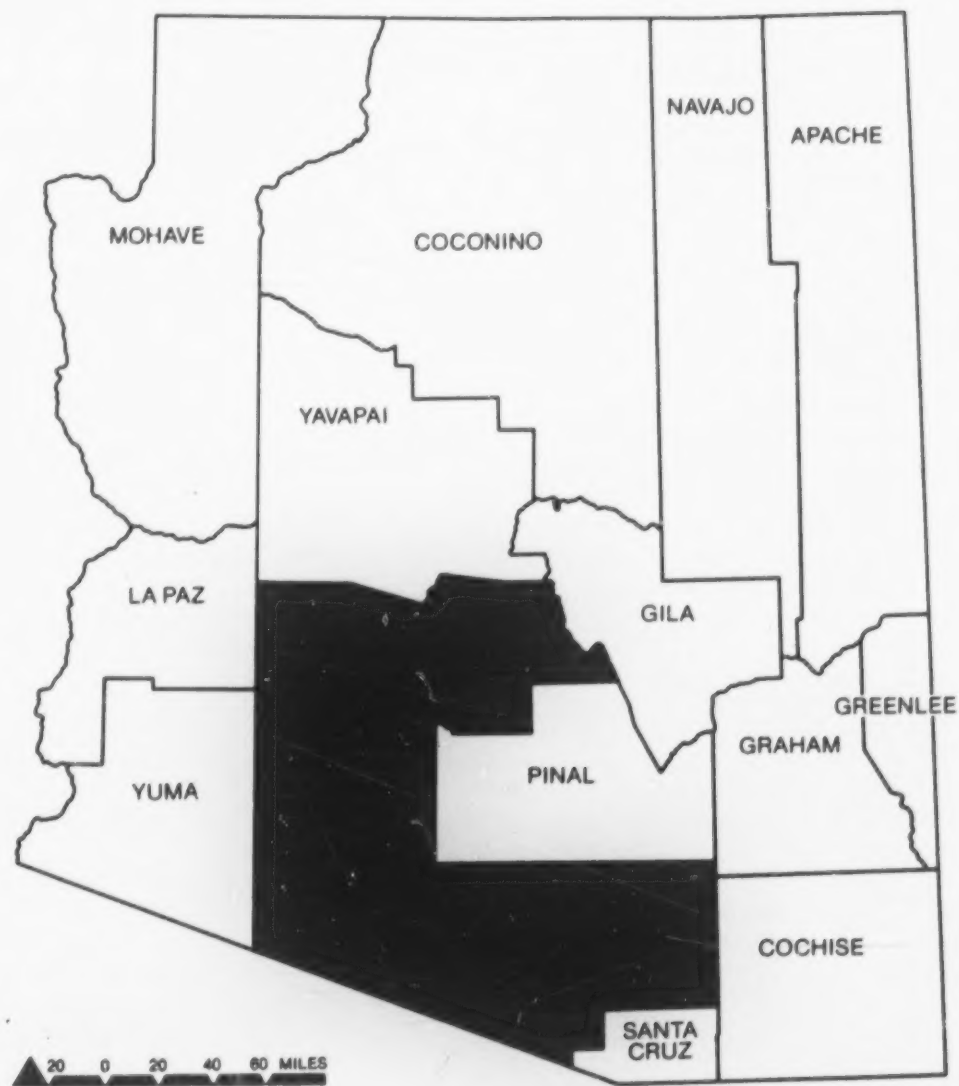
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MAP 4

COUNTY PROFILE MAPS



MOHAVE



LA PAZ



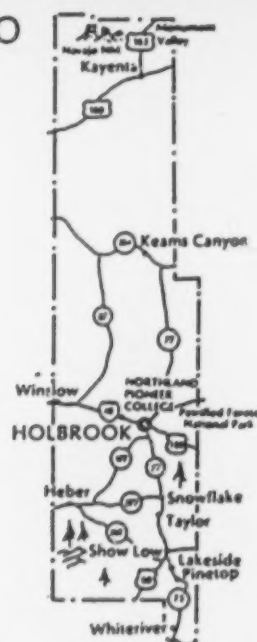
YUMA



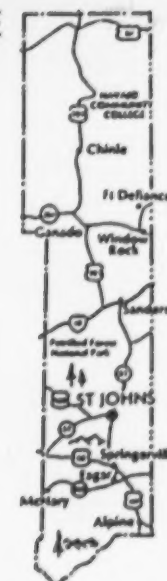
COCONINO



NAVAJO



APACHE



YAVAPAI



GRAHAM



GILA



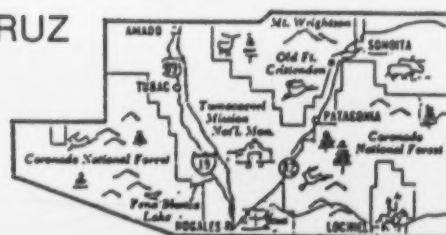
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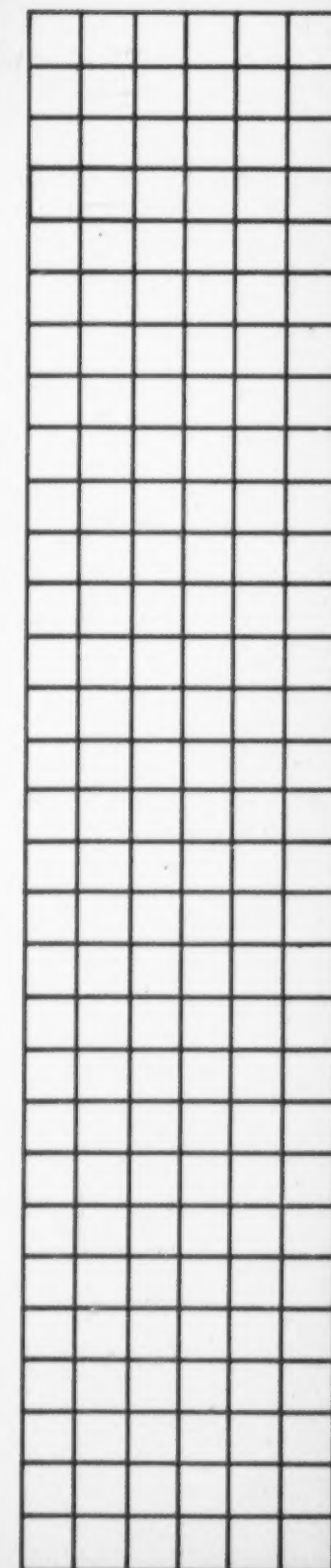
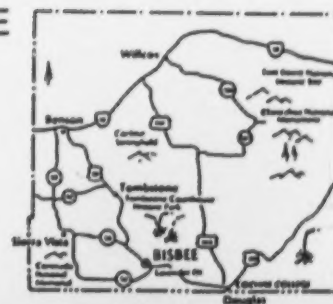
GREENLEE



SANTA CRUZ



COCHISE



(continued from page 15)

Income: \$6,703.00 per capita

Unemployment: 14.2%

Percent in Poverty: 13.4%

Trends: Trade is at the economic base, supplemented by manufacturing. Nogales (on the Mexican border) is home to 90% of the county's population and is a major trade and agricultural shipping center. Growth rates will fluctuate with economic conditions in Mexico.

Yavapai County

Area Size: 8,123 sq. miles

Land Ownership: Government (75%); Private (25%)

Leading Industries: Tourism; Recreation; Ranching; Copper

1987 Population: 95,000

Population Density: 11.7 per sq. mile

Age: 19 and under (26%); 65+ (21%)

Race/Ethnic: White (96%); Spanish Heritage (6%)

Income: \$7,909.00 per capita

Unemployment: 6.3%

Percent in Poverty: 9.3%

Trends: Population growth of nearly 6% in the last decade has brought substantial increases in trade, services, construction, real estate, and government services. Tourism and light manufacturing are expanding. The economic outlook is bright.

Yuma County

Area Size: 5,510 sq. miles

Land Ownership: Other public use (68%); Government (20%); Private (12%)

Leading Industries: Agriculture; Ranching; Tourism; Government

1987 Population: 89,500

Population Density: 16.2 per sq. mile

Age: 19 and under (35%); 65+ (14%)

Race/Ethnic: White (93%); Black (5%); Spanish Heritage (37%)

Income: \$7,120.00 per capita

Unemployment: 26.6%

Percent in Poverty: 12.3%

Trends: The economy is in transition from an agricultural base to one of tourism, trade, manufacturing and services. Yuma is an international border trade center, serving a large market of Mexican nationals. To some degree, it is dependent on the Mexican economy. Local population growth is stimulated by expansion of government facilities, notably a military installation, a new prison and schools. Continued diversification will bring additional economic strength to the area.

¹ U.S. Bureau of the Census, *1980 Area and Population by County*, Washington D.C. (all Arizona counties except La Paz and Yuma Counties). Data for La Paz County from Basic Counts of Population and Housing, Special Census of La Paz County, Arizona, November 5, 1985. Data for Yuma County from Basic Counts of Population and Housing, Special Census of Yuma County, Arizona, November 6, 1985.

² Valley National Bank of Arizona, *1986 Arizona Statistical Review*, Phoenix, Arizona, September, 1986. "Government-owned" land includes both federal and state government, but excludes Indian reservations. Totals do not always equal 100%.

³ *1986 Arizona Statistical Review*, and the Arizona Department of Economic Security, Research Administration, *Arizona Annual Planning Information 1987-1988*, April, 1986, p. 249.

⁴ Arizona Department of Economic Security, Population Statistics Unit, *Arizona Population Projections — Counties and Places, 1986-2035*, December, 1986.

⁵ 1987 Population density calculated by the University of Arizona, Rural Health Office (Phoenix satellite), using Arizona Population Projections — Counties and Places, 1986-2035, December, 1986.

⁶ Arizona Department of Economic Security, Population Statistics Unit, *Arizona Baseline Projections, Table 4-B, Population by Age and Sex*, December, 1986.

⁷ U.S. Bureau of the Census, *1980 Area and Population by County*, Washington D.C. (all Arizona counties except La Paz and Yuma Counties). Data for La Paz County from Basic Counts of Population and Housing, Special Census of La Paz County, Arizona, November 5, 1985. Data for Yuma County from Basic Counts of Population and Housing, Special Census of Yuma County, Arizona, November 6, 1985. The percentage of persons of Spanish heritage, who may be of any race, account for some percentages being more than 100%.

⁸ U.S. Bureau of the Census, *Local Population Estimates, 1983 Per Capita Income Estimates for Counties and Incorporated Places, Series P-26*, June, 1986.

⁹ Arizona Department of Economic Security, *Statewide Labor Force News Release* June, 1987 statistics.

¹⁰ Arizona Department of Economic Security, Research Administration, *Arizona Annual Planning Information 1987-1988*, April, 1986, p. 249. Percent of Families with Income Below Poverty Level (1980 Census).

¹¹ *Arizona Annual Planning Information 1987-1988*, April, 1986, p. 249, and Charney, Shift Share Analysis of Arizona Counties, *Arizona Review*, University of Arizona, College of Business and Public Administration, Tucson, Arizona, Spring, 1987.

Community Perspective

Arizona communities provide unique and varied lifestyles. Within a 2- to 4-hour drive, you can ski in the north or play golf and swim in the southern portions of the state.

Although Arizona's population is concentrated in the metropolitan areas of Phoenix and Tucson, approximately 25% of Arizonans live in small communities. Most of these rural areas are unincorporated and relatively little information is available, even as to the size of population. Population figures from the 1980 census, special 1985 census figures and 1987 estimates, where they are available, are presented in *The Atlas* for more than 200 Arizona communities.

Further information about Arizona's communities can be obtained from local sources and in publications from the Arizona Department of Commerce. *Arizona Community Profiles*, published by the Department's Community Development program is a particularly good source of more detailed information.

MAP 5
ARIZONA LOCATION MAP

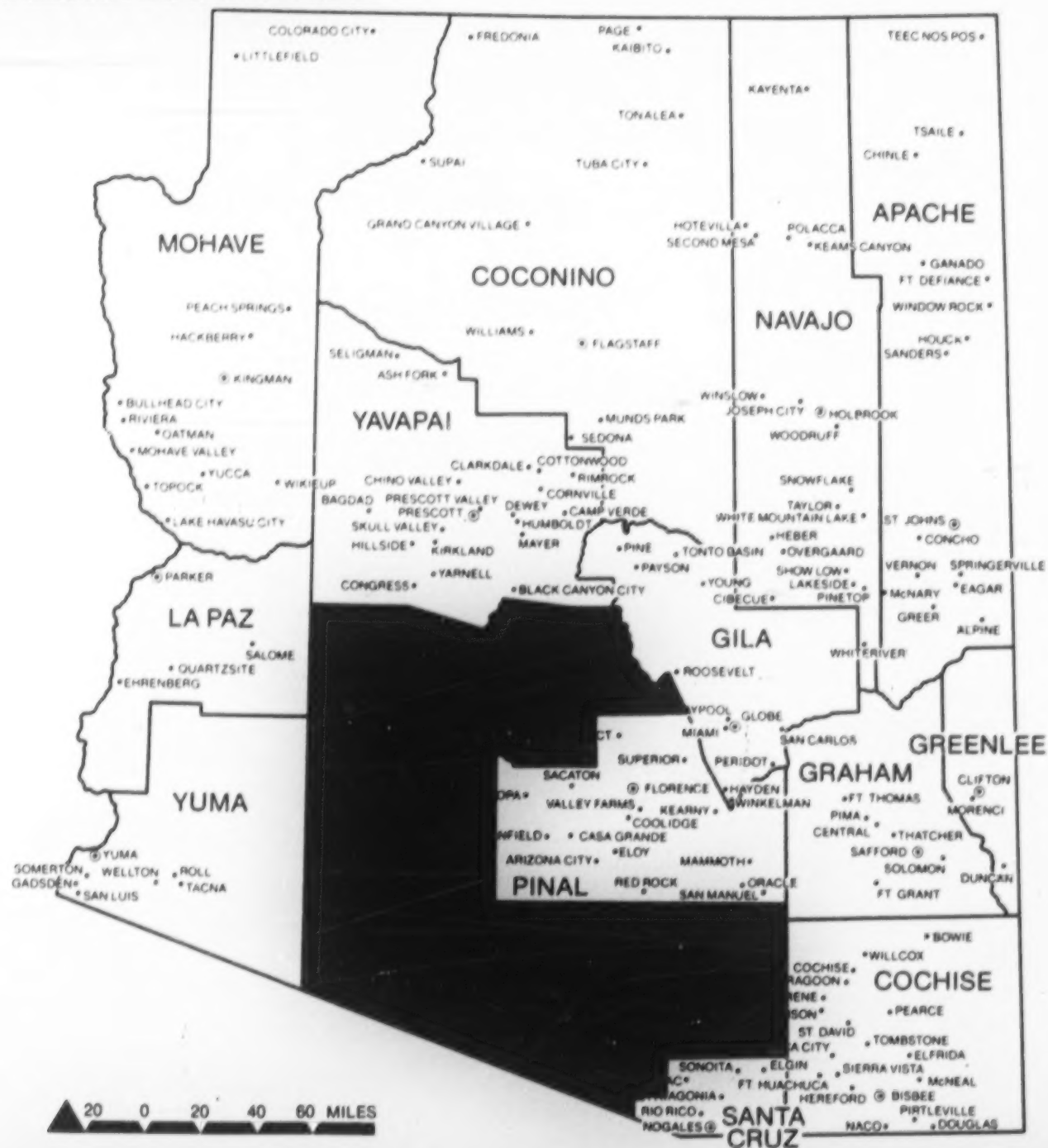


TABLE 5

POPULATION OF ARIZONA COMMUNITIES BY COUNTY, 1980-87

Apache County

Community	Population		
	1980 ^{1,2}	1985 ³	1987 ⁴
Alpine	500 #		560
Chambers	400 #		n/a
Chinle	2815		3360
Concho	150 #		250
Concho Valley	n/a		660
Eagar	2791	4001	4500
Ft. Defiance	3431		4185
Ganado	1200 #		n/a
Greasewood	450 #		1030
Greer	150 #		50
Houck*	1120		n/a
Lukachukai	1049 #		1225
Many Farms	1364 #		1590
McNary † (See Navajo Co.)			
Nutrioso	100 #		110
Sanders	400 #		600
Springerville	1452	1879	2040
St. Johns	3368		3875
Teec Nos Pos*	1340		n/a
Tsaile/Upper Wheatfields*	1325		n/a
Vernon	100 #		260
Window Rock	2230		2720

Cochise County

Community	Population		
	1980 ^{1,2}	1985 ³	1987 ⁴
Benson	4190	3737	3895
Bisbee	7154		8060
Bowie	600 #		n/a
Cochise	100 #		n/a
Douglas	13058		14090
Draoon	150 #		n/a
Elfrida	300 #		n/a
Hereford	50 #		n/a
Huachuca City	1661		2115

McNeal	60 #		n/a
Naco	800 #		n/a
Pearce	20 #		n/a
Pirtleville	1425		n/a
Pomerene	200 #		n/a
Sierra Vista	24937	28788	32350
Inc. Ft. Huachuca	9475		
St. David	1300		n/a
Tombstone	1632		1790
Willcox	3243		3935

Coconino County

Community	Population		
	1980 ^{1,2}	1985 ³	1987 ⁴
Black Bill/	n/a		3800
Doney Park			
Cameron	n/a		610
Flagstaff	34743	38247	41170
Fredonia	1040		1285
Grand Canyon	1348		1380
Kachina village	n/a		1940
Kaibito	300 #		n/a
Leupp/Sunrise	50 #		1050
Mountainaire	700 #		610
Page	4907	6469	6940
Parks	150 #		1120
PineWood/	n/a		650
Munds Park			
Sedona (pt.) † (See Yavapai Co.)	1778		2750
Supai	200 #		n/a
Tonalea	150 #		n/a
Tuba City	5045		6120
Tusayan	250 #		540
Williams	2266		2390

Gila County

Community	Population		
	1980 ^{1,2}	1985 ³	1987 ⁴
Claypool	2362		n/a

Globe	6886		6455
Hayden	1205		1095
Miami	2716		2555
Payson	5068	7003	7445
Peridot	300 #		n/a
Pine	500 #		n/a
Roosevelt	1045		n/a
San Carlos	2668		n/a
Tonto Basin	200 #		n/a
Winkelman	1060		945
Young	300 #		n/a

Graham County

Community	Population		
	1980 ^{1,2}	1985 ³	1987 ⁴
Bylas	1175		n/a
Central	250 #		n/a
Ft. Grant (Prison Pop.)	600 #		n/a
Ft. Thomas	200 #		n/a
Pima	1599		1900
Safford	7010		7740
Solomon	250 #		n/a
Thatcher	3374	3436	3470

Greenlee County

Community	Population		
	1980 ^{1,2}	1985 ³	1987 ⁴
Clifton	4245		4225
Duncan	603		690
Morenci	2736		n/a

La Paz County

Community	Population		
	1980 ^{1,2}	1985 ³	1987 ⁴
Ehrenberg	900 #		n/a
Parker	2542	2506	2590
Quartzite	600 #		n/a
Salome	600 #		n/a
Wenden	300 #		n/a

Maricopa County

Community	Population		
	1980 ^{1,2}	1985 ³	1987 ⁴
Avondale	8168	9704	12060
Buckeye	3434	3779	4125
Carefree	986	1518	1600
Cashion	3014		n/a
Cave Creek	1589		n/a
Chandler	29673	63817	78600
Dreamland Villa	5969		n/a
El Mirage	4307	3908	4580
Fountain Hills	2771	5797	n/a
Gila Bend	1585	1999	2180
Gilbert	5717	12102	18580
Glendale	97172	122392	135520
Goodyear	2747	4598	5315
Guadalupe	4506	4609	4645
Higley	200 #		n/a
Laveen	600 #		n/a
Litchfield Park	3657	3747	n/a
Mesa	152453	239587	259780
Morristown	200 #		n/a
Palo Verde	100 #		n/a
Paradise Valley	11085	11510	12090
Peoria	12307	27598	34500
Phoenix	789704	881640	927965
Queen Creek	900 #		n/a
Scottsdale	88622	108447	120045
Sun City	40505	39871	n/a
Sun City West	3772	10450	n/a
Sun Lakes	1925	5030	n/a
Surprise	3723	4020	6460
Tempe	106920	132942	141365
Tolleson	4433	4438	4790
Waddell	100 #		n/a
Wickenburg	3535	3925	4385
Wittmann	700 #		n/a
Youngtown	2254	2287	2290

Mohave County

Community	Population		
	1980 ^{1,2}	1985 ³	1987 ⁴
Bullhead City/ Riviera	10364	17091	20315
Colorado City	450 #	2099	2290
Dolan Springs	650 #		n/a
Kingman	9257	10428	11280
Lake Havasu City	15909	17749	19530
Littlefield	50 #		n/a
Mohave Valley	750 #		n/a
Oatman	200 #		n/a
Peach Springs	600 #		n/a
Topock	300 #		n/a
Wikieup	250 #		n/a
Yucca	175 #		n/a

Navajo County

Community	Population		
	1980 ^{1,2}	1985 ³	1987 ⁴
Cibicue	950 #		n/a
Dilkon	250 #		995
Heber/Overgaard	900 #		2405
Holbrook	5785		5960
Hotevilla	680		n/a
Joseph City	900 #		1350
Kayenta	3343		3900
Keams Canyon	233		n/a
Kykotsmovi Village (Oraibi)	636		n/a
Lakeside/Pinetop	2860	2389	2650
McNary† (See Apache Co.)	1320		n/a
Polacca	989		n/a
Second Mesa	200 #		n/a
Shonto	600 #		1180
Show Low	4298	5027	5410
Shumway	n/a		235
Snowflake	3510	3656	3770
Sun Valley	150 #		280

Taylor	1915	2006	2035
White Mtn. Lake	200 #		270
White River	2834		2460
Winslow	7921		8795
Woodruff	250 #		395

Pima County

Community	Population		
	1980 ^{1,2}	1985 ³	1987 ⁴
Ajo	5189		n/a
Arivaca	170 #		n/a
Catalina	2749		n/a
Continental	150 #		n/a
Cortaro	200 #		n/a
Green Valley	7999		n/a
Marana	1674	1601	2250
Mt. Lemmon	300 #		n/a
Oro Valley	1489	2866	5200
Sahuarita	600 #		n/a
Sells	1864		n/a
Silver Bell	600 #		n/a
South Tucson	6554 #	5969	6745
Tucson	330537	354533	395635
Vail	100 #		n/a

Pinal County

Community	Population		
	1980 ^{1,2}	1985 ³	1987 ⁴
Apache Junction	9935	14279	15485
Arizona City	825		n/a
Casa Grande	14971	15647	17140
Coolidge	6851	6824	7490
Eloy	6240	5797	7135
Florence	3391	6094	6690
Kearny	2646		2765
Mammoth	1906	1778	1955
Maricopa	900 #		n/a
Oracle	2484		n/a

(continued on page 22)

(continued from page 21)

Red Rock	60 #	n/a
Sacaton	1951	n/a
San Manuel	5443	n/a
Stanfield	900 #	n/a
Superior	4600	4800
Valley Farms	320 #	n/a

Santa Cruz County

Community	Population	
	1980 ^{1,2}	1985 ³
Elgin	50 #	n/a
Nogales	15683	19275
Patagonia	980	1155
Rio Rico	600 #	n/a
Sonoita	50 #	n/a
Tubac	160 #	n/a

Yavapai County

Community	Population	
	1980 ^{1,2}	1985 ³
Ash Fork	600 #	n/a
Bagdad	2331	1700
Black Canyon City	600 #	2000
Camp Verde	1125	5885
Chino Valley	2858	3817
Clarkdale	1512	1696
Congress	450 #	635
Cordes Jct./ Cordes Lakes	n/a	760
Cornville	800 #	1285
Cottonwood	4550	5400
Dewey	400 #	1085
Humbolt	400 #	760
Jerome	420 #	470
Kirkland	60 #	n/a
Lake Montezuma	500 #	1795
Mayer	950 #	1390
Oak Creek Village	n/a	2860
Prescott	20055	21335
Prescott Valley	2284	5471
Rimrock	100 #	n/a
Sedona (pt.)† (See Coconino Co.)	3590	6270

Seligman	510	n/a
Skull Valley	300 #	n/a
Yarnell	950 #	1120

Yuma County

Community	Population		
	1980 ^{1,2}	1985 ³	1987 ⁴
Gadsen	500 #		n/a
Roll	200 #		n/a
San Luis	1946	2809	2890
Somerton	5761	4381	4580
Tacna	500 #		n/a
Wellton	911	940	995
Yuma	42481	46807	49005

Sources:

1. Table 2 and Table 2A: Population and Housing Counts of Arizona Counties, 1980 Census, (April 1, 1980) Prepared by: Population Statistics Unit, Arizona Department of Economic Security, November, 1983.

2. *Rand McNally Commercial Reference Map and Guide - Arizona*. Chicago: Rand McNally and Co. 1983. The use of the Rand McNally guide helps supplement population data for places in Arizona which are well known but may not appear in the Census.

3. Table D-1: Special Census Population of Arizona Counties, Cities, Towns - 1985. *A Demographic Guide to Arizona 1985*, Arizona Department Economic Security. Population Statistics Unit. Report No. 14. August, 1986.

4. Table 1: Arizona Population Projections, Counties, Cities, Towns: 1986-2035. Arizona Department of Economic Security Population Statistics Unit, December, 1986.

Notes:

n/a — indicates a primarily rural area with a small unincorporated settlement where census counts and/or projections are not available for the community.

* — Tribal Chapter Areas. 1980 Enumeration numbers, official counts. Dr. Ronald Faich, Navajo Tribal Demographer, 1987.

— Data from Rand McNally and Co. 1983

† — McNary 1980 Census population was reported separately for Apach (318) and Navajo (1002) Counties. Total population for McNary (1320) is reported in Navajo Co.

‡ — Sedona population data are reported separately for Coconino and Yavapai Counties. The 1987 partial statistics were provided by J. Weidman, Planning and Development Director, Northern Arizona Council of Governments, per telephone June 1, 1987. For complete population information of Sedona see both Coconino and Yavapai Counties. In the Tables of this Atlas, the location of Sedona providers are based upon the provider's self reported addresses and all providers for Sedona are categorized in Coconino County.

**Health Care
Providers**

Chiropractors

Chiropractors in Arizona

Chiropractors primarily "adjust" or manipulate parts of the body, especially the spinal column, which is claimed to relieve impairments to the central nervous system. Chiropractors use spinal x-rays for diagnosing problems, but they do not use drugs or surgery. They are licensed, tested and certified at the state and national level.

There were 890 chiropractors licensed by the Arizona State Board of Chiropractic Examiners as of July 1987, with 165 of them in the rural counties. In 1984, there were 657 chiropractors in the state, with 139 in the rural counties.¹

The ratio of chiropractors per 100,000 population in Arizona moved up from 22 in 1984 to 26 in 1987. The rural counties showed a ratio increase from 19 to 20 during the same time period.

The national ratio in 1981 was 17.²

Maricopa County accounted for a majority of the increase with the actual number of providers rising from 432 to 612 — an increase of 180 (42%).

In the rural counties, Pinal and Yuma Counties showed a 50% increase. Pinal County increased from 12 chiropractors to 18 while Yuma County went from 8 to 12. Yavapai County increased from 33 to 41 — a 24% jump and had the highest ratio (43) of any county in the state.

There still are no chiropractors in Greenlee County while La Paz and Santa Cruz Counties have 1 each. In 1984, La Paz had 3 and Santa Cruz had 2.

Note: See appendix on Holistic Health. Chiropractors are included in this category.

¹ Compiled from the Arizona State Board of Chiropractic Examiners, *Chiropractors Directory*, 1987, and *The Arizona Rural Health Provider Atlas*, 1984, p. 16.

² *The Arizona Rural Health Provider Atlas*, p. 16.

TABLE 6

LICENSED CHIROPRACTORS IN ARIZONA, 1987 BY COUNTY

Counties Without an SMSA	Chiropractors	1987 Population ¹	Ratio ²
Apache	2	62,400	3
Cochise	14	100,300	14
Coconino	27	91,900	29
Gila	5	40,100	12
Graham	5	24,700	20
Greenlee	0	9,600	0
La Paz	1	14,200	7
Mohave	27	79,300	34
Navajo	12	75,700	16
Pinal	18	107,200	17
Santa Cruz	1	29,200	3
Yavapai	41	95,000	43
Yuma	12	89,500	13
	165	819,100	20

Counties With an SMSA

Maricopa	612	1,990,800	31
Pima	113	659,100	17
	725	2,649,900	27

Arizona Total =	890	3,469,000	26
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¹ Arizona Department of Economic Security, Population Statistics Unit, Table 1, Arizona Population Projections - Counties and Places 1986-2035, December, 1986.

² Chiropractors per 100,000 population.

Source: Arizona State Board of Chiropractic Examiners, *Chiropractors Directory*, 1987.

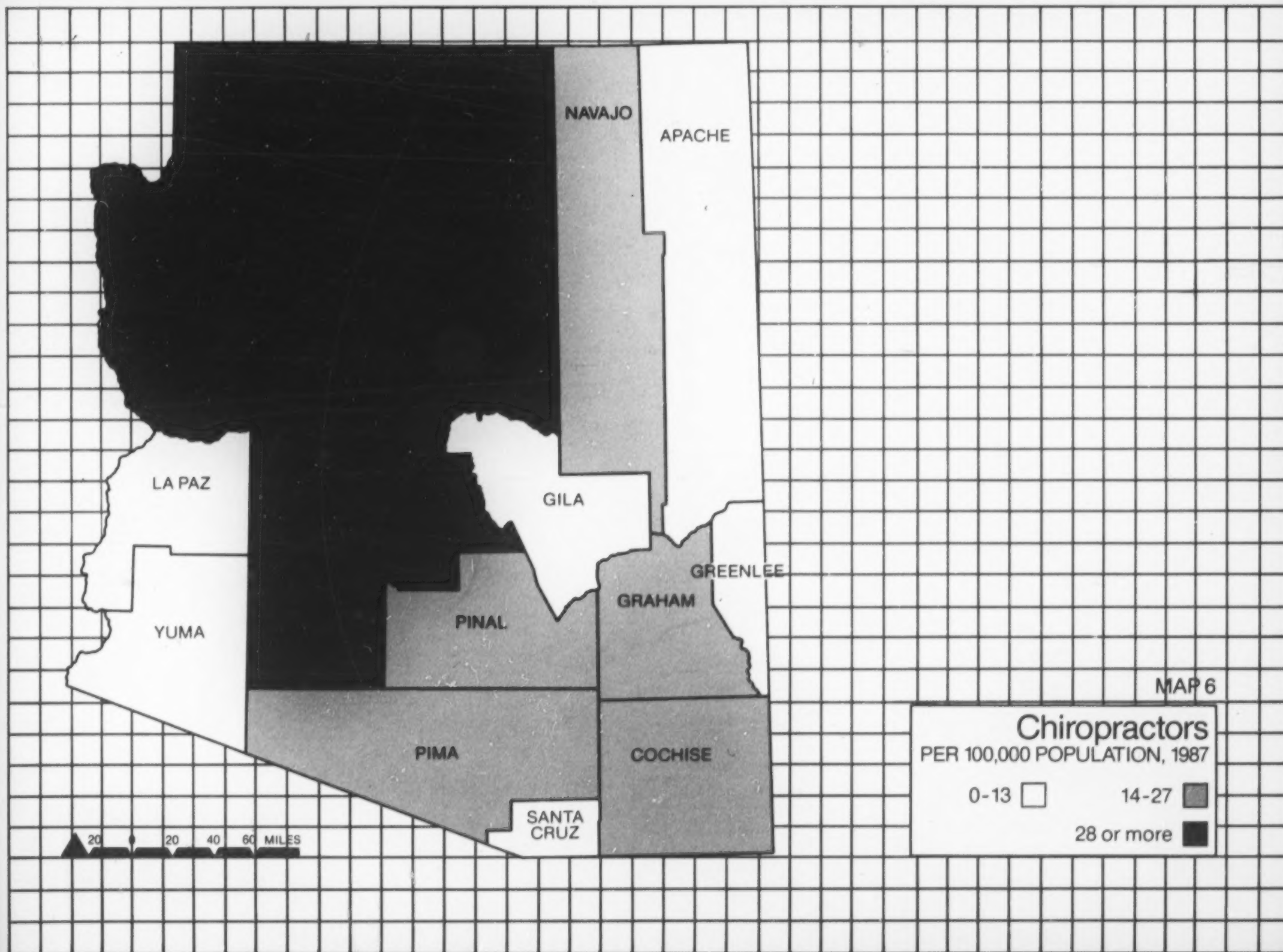
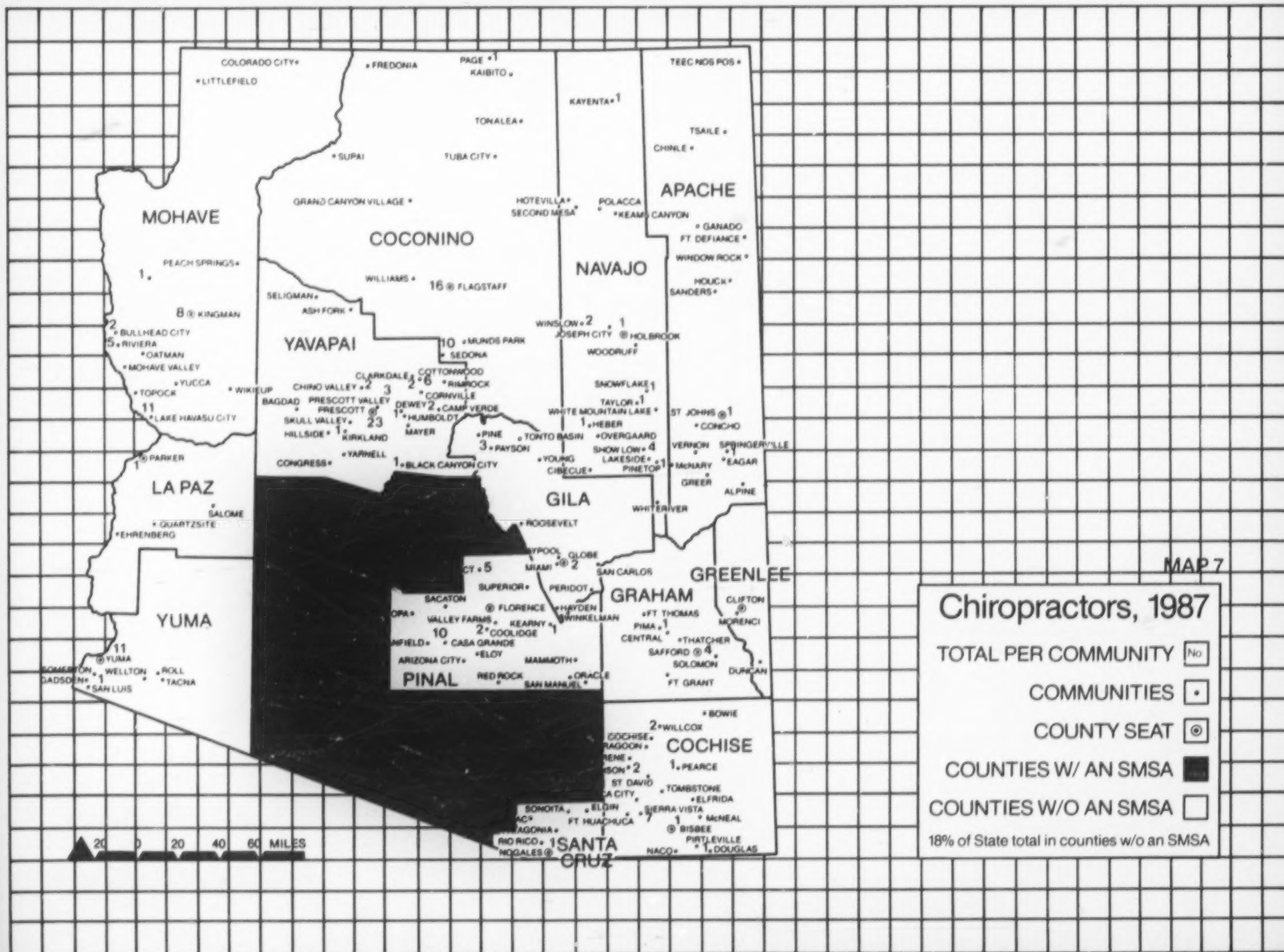


TABLE 7

LICENSED CHIROPRACTORS IN ARIZONA, 1987 BY COMMUNITY

Apache County		Maricopa County		Pima County		Total Counties Without an SMSA	
Springerville	1	Avondale	1	Green Valley	3		165
St. Johns	1	Buckeye	1	Marana	1	Counties With an SMSA	
Total	2	Carefree	1	Sahuarita	1		
		Cave Creek	2	Tucson	108		
Cochise County		Chandler	20	Total	113	Maricopa	612
Benson	2	Fountain Hills	5			Pima	113
Bisbee	1	Gilbert	6				725
Douglas	1	Glendale	39	Pinal County			
Pearce	1	Goodyear	1	Apache Junction	5	Arizona Total =	890
Sierra Vista	7	Mesa	108	Casa Grande	10	Source: Arizona State Board of Chiropractic Examiners, Chiropractors Directory, 1987.	
Willcox	2	Peoria	3	Coolidge	2		
Total	14	Phoenix	286	Kearny	1		
		Scottsdale	58	Total	18		
Coconino County		Sun City	12				
Flagstaff	16	Sun City West	4	Santa Cruz County			
Page	1	Sun Lakes	4	Nogales	1		
Sedona	10	Tempe	49	Total	1		
Total	27	Wickenburg	4				
		Youngtown	8				
		Total	612	Yavapai County			
Gila County				Black Canyon City	1		
Globe	2	Mohave County		Camp Verde	2		
Payson	3	Bullhead City	2	Chino Valley	2		
Total	5	Dolan Springs	1	Clarkdale	2		
		Kingman	8	Cottonwood	6		
Graham County		Lake Havasu City	11	Dewey	1		
Pima	1	Riviera	5	Kirkland	1		
Safford	4	Total	27	Prescott	23		
Total	5			Prescott Valley	3		
		Navajo County		Total	41		
Greenlee County		Heber	1				
Total	0	Holbrook	1	Yuma County			
		Kayenta	1	San Luis	1		
La Paz County		Pinetop	1	Yuma	11		
Parker	1	Show Low	4	Total	12		
Total	1	Snowflake	1				
		Taylor	1				
		Winslow	2				
		Total	12				



Dental Hygienists

Dental Hygienists in Arizona

Dental hygienists are the only allied dental personnel who are licensed by the Arizona State Board of Dental Examiners. They perform many preventive and therapeutic services under the supervision of a dentist.

Most are employed in the private sector, but others work in a variety of practice settings including public health, dental hygiene education, hospitals, clinics and programs for the handicapped patient.

The number of dental hygienists in Arizona increased from 827 in 1984 to 993 in 1987 (up 20%), with most of the increase occurring in Maricopa County (554 to 692, up 25%).¹

Despite an increase in the state ratio of dental hygienists per 100,000 population from 27 in 1984 to 29 in 1987, it was still below the 1984 national ratio of 31.²

The actual number of dental hygienists increased in the rural areas from 105 in 1984 to 118 in 1987, but the ratio in the rural areas remained constant at 14.

Coconino County continues to exceed the state average with a ratio of 47. There are 43 dental hygienists in Coconino County, compared to 35 in 1984. This is probably due to the existence of the dental hygiene program at Northern Arizona University in Flagstaff.

Cochise and Yuma Counties also showed an increase in the number of providers from 6 to 9 (a 50% jump), while Navajo County showed a drastic drop, losing 4 of the 9 dental hygienists it had in 1984. Greenlee and La Paz Counties continue to be without dental hygienists. Santa Cruz County joined them, losing the dental hygienist it had in 1984.

¹ Compiled from the Arizona State Board of Dental Examiners, *Arizona Dental Directory*, 1986-1987, and *The Arizona Rural Health Provider Atlas*, 1984, p. 20.

² *The Arizona Rural Health Provider Atlas*, p. 20.

TABLE 8

LICENSED DENTAL HYGIENISTS IN ARIZONA, 1987 BY COUNTY

Counties Without an SMSA	Dental Hygienists	1987 Population ¹	Ratio ²
Apache	3	62,400	5
Cochise	9	100,300	9
Coconino	43	91,900	47
Gila	5	40,100	12
Graham	7	24,700	28
Greenlee	0	9,600	0
La Paz	0	14,200	0
Mohave	9	79,300	11
Navajo	5	75,700	7
Pinal	11	107,200	10
Santa Cruz	0	29,200	0
Yavapai	17	95,000	18
Yuma	9	89,500	10
	118	819,100	14

Counties With an SMSA			
Maricopa	692	1,990,800	35
Pima	183	659,100	28
	875	2,649,900	33

Arizona Total =	993	3,469,000	29
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¹ Arizona Department of Economic Security, Population Statistics Unit, Table 1, Arizona Population Projections - Counties and Places 1986-2035, December, 1986.

² Dental Hygienists per 100,000 population.

Source: Arizona State Board of Dental Examiners, *Arizona Dental Directory*, 1986-1987.

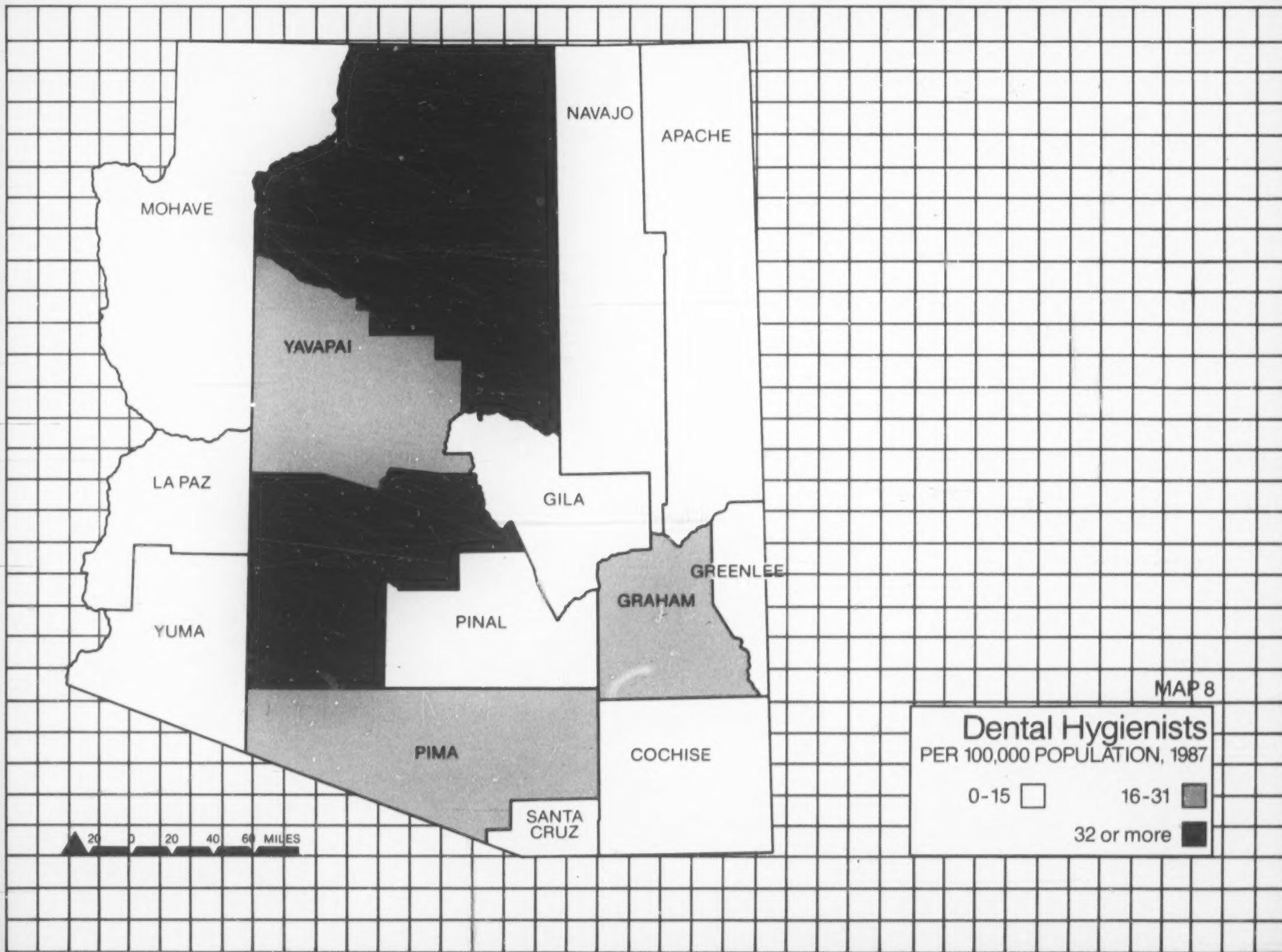
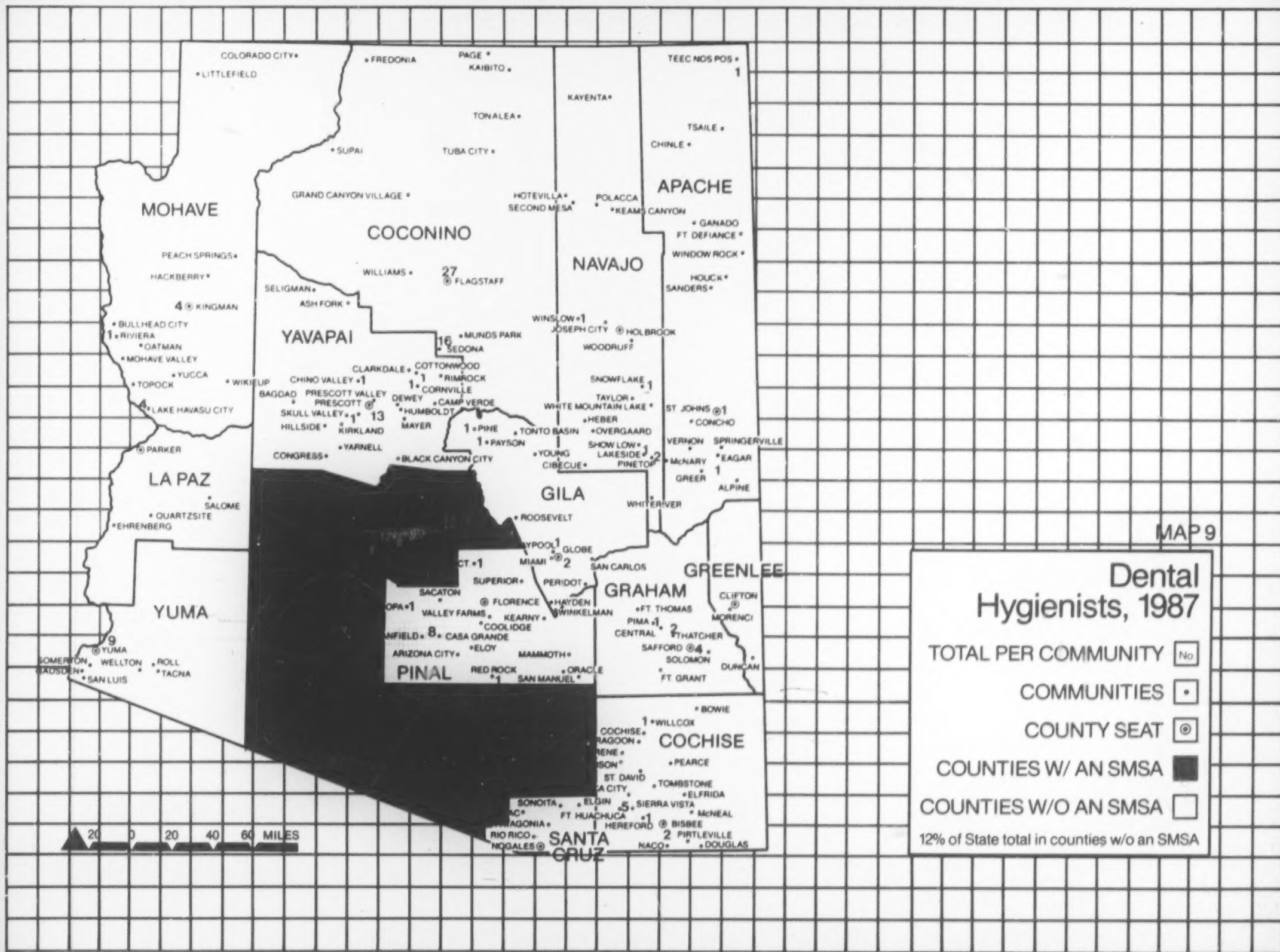


TABLE 9

LICENSED DENTAL HYGIENISTS IN ARIZONA, 1987 BY COMMUNITY

Apache County		Maricopa County		Pima County		Total Counties Without an SMSA	
Eagar	1	Buckeye	1	Oro Valley	1		118
St. Johns	1	Carefree	1	Sahuarita	1		
Teec Nos Pos	1	Cave Creek	2	Tucson	181	Counties With an SMSA	
Total	3	Chandler	31	Total	183	Maricopa	692
		Fountain Hills	3			Pima	183
		Gilbert	7				875
Cochise County		Glendale	56	Pinal County			
Bisbee	2	Goodyear	1	Apache Junction	1		
Hereford	1	Higley	2	Casa Grande	8	Arizona Total =	
Sierra Vista	5	Laveen	1	Maricopa	1		993
Willcox	1	Litchfield Park	4	Red Rock	1	Source: Arizona State Board of Dental Examiners, <i>Arizona Dental Directory</i> , 1986-1987.	
Total	9	Mesa	82	Total	11		
		Paradise Valley	6				
Coconino County		Peoria	9	Santa Cruz County			
Flagstaff	27	Phoenix	307	Total	0		
Sedona	16	Scottsdale	110				
Total	43	Sun City	3	Yavapai County			
		Sun City West	1	Chino Valley	1		
Gila County		Tempe	62	Cornville	1		
Claypool	1	Tolleson	1	Cottonwood	1		
Globe	2	Waddell	1	Groom Creek	1		
Payson	1	Wickenburg	1	Prescott	13		
Pine	1	Total	692	Total	17		
Total	5						
Graham County		Mohave County		Yuma County			
Pima	1	Kingman	4	Yuma	9		
Safford	4	Lake Havasu City	4	Total	9		
Thatcher	2	Riviera	1				
Total	7	Total	9				
Greenlee County		Navajo County					
Total	0	Lakeside	1				
		Pinetop	2				
La Paz County		Snowflake	1				
Total	0	Winslow	1				
		Total	5				



Dentists

Dentists in Arizona

Dentists are the primary providers of dental care. Their goal is to diagnose and treat oral diseases of the teeth and supporting structures. Dentists promote the prevention of dental disease through various means including the use of fluorides, sealants and dental and nutritional health education including proper oral hygiene instruction and early detection of oral cancer.

There were 1,641 dentists in Arizona in 1984, with 265 of them in the rural counties. In 1987, there were 1,815 dentists in the state, with 285 of them in the rural counties. While the number of dentists increased by 20 in the rural areas, the ratio of dentists per 100,000 population dropped from 36 in 1984 to 35 in 1987. The overall ratio in the state dropped from 54 to 52.¹

The state is below the 1984 national ratio of 57.²

Mohave County showed the biggest increase in the actual number of dentists in the rural areas, climbing from 27 in 1984 to 34 in 1987 (up 26%). Yavapai County went up from 40 dentists in 1984 to 48 in 1987 (up 20%) and Coconino County registered an increase from 51 to 55 (up 8%). Coconino County is the only rural county that continues to exceed the state ratio, as it did in 1984.

¹ Compiled from The Arizona State Board of Dental Examiners, *Arizona Dental Directory*, 1986-1987, and *The Arizona Rural Health Provider Atlas*, 1984, p. 24.

² U.S. Department of Commerce, Bureau of Census, *1987 Statistical Abstract of the United States*, 107th Edition.

TABLE 10

LICENSED DENTISTS IN ARIZONA, 1987 BY COUNTY

Counties Without an SMSA	Dentists	1987 Population ¹	Ratio ²
Apache	12	62,400	19
Cochise	28	100,300	28
Coconino	55	91,900	60
Gila	9	40,100	22
Graham	12	24,700	49
Greenlee	1	9,600	10
La Paz	2	14,200	14
Mohave	34	79,300	43
Navajo	25	75,700	33
Pinal	22	107,200	20
Santa Cruz	3	29,200	10
Yavapai	48	95,000	50
Yuma	34	89,500	38
	285	819,100	35
Counties With an SMSA			
Maricopa	1,148	1,990,800	58
Pima	382	659,100	58
	1,530	2,649,900	58
Arizona Total =	1,815	3,469,000	52

¹ Arizona Department of Economic Security, Population Statistics Unit, Table 1, Arizona Population Projections - Counties and Places 1986-2035, December, 1986.

² Dentists per 100,000 population.

Source: Arizona State Board of Dental Examiners, *Arizona Dental Directory*, 1986-1987.

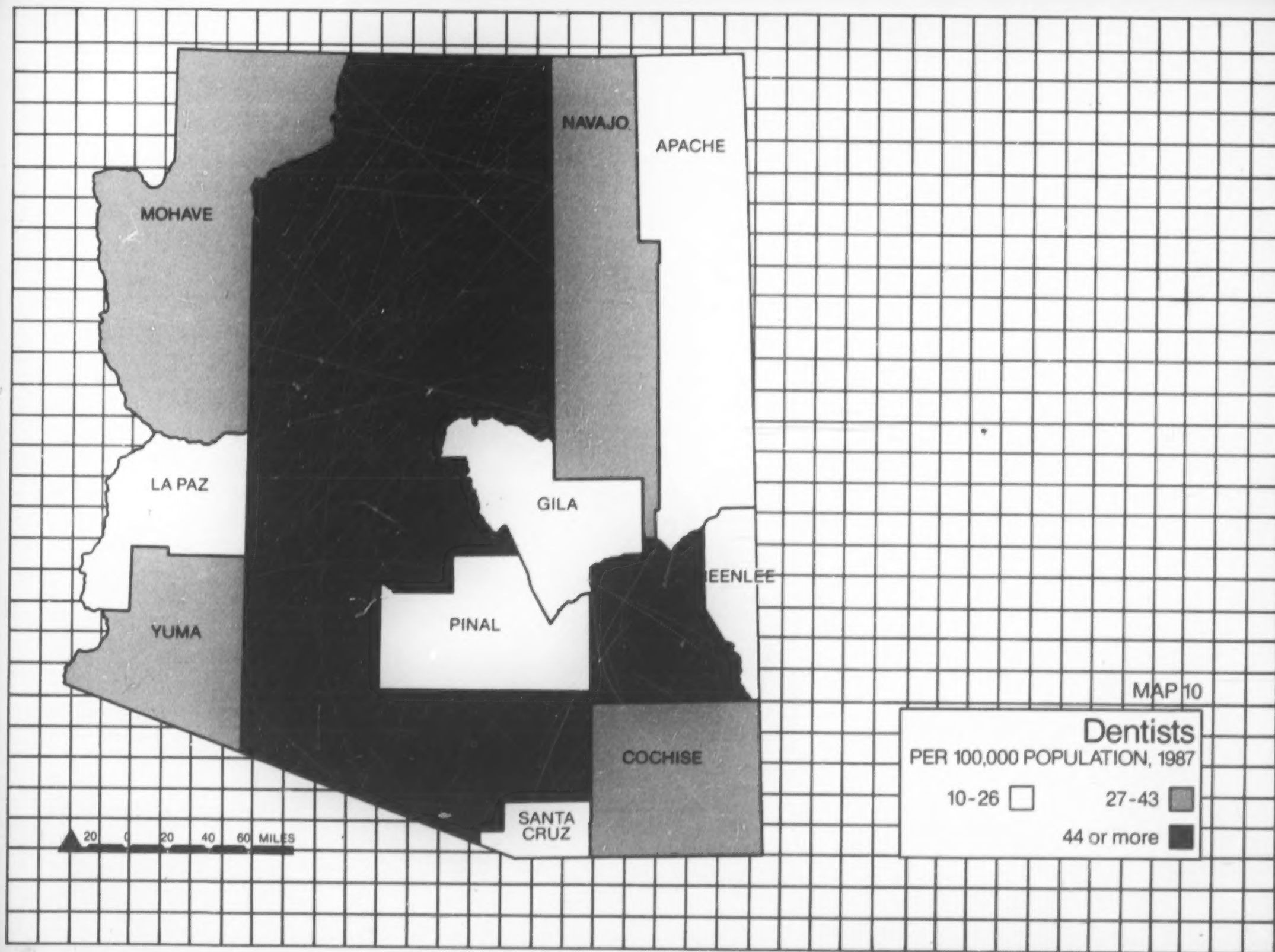
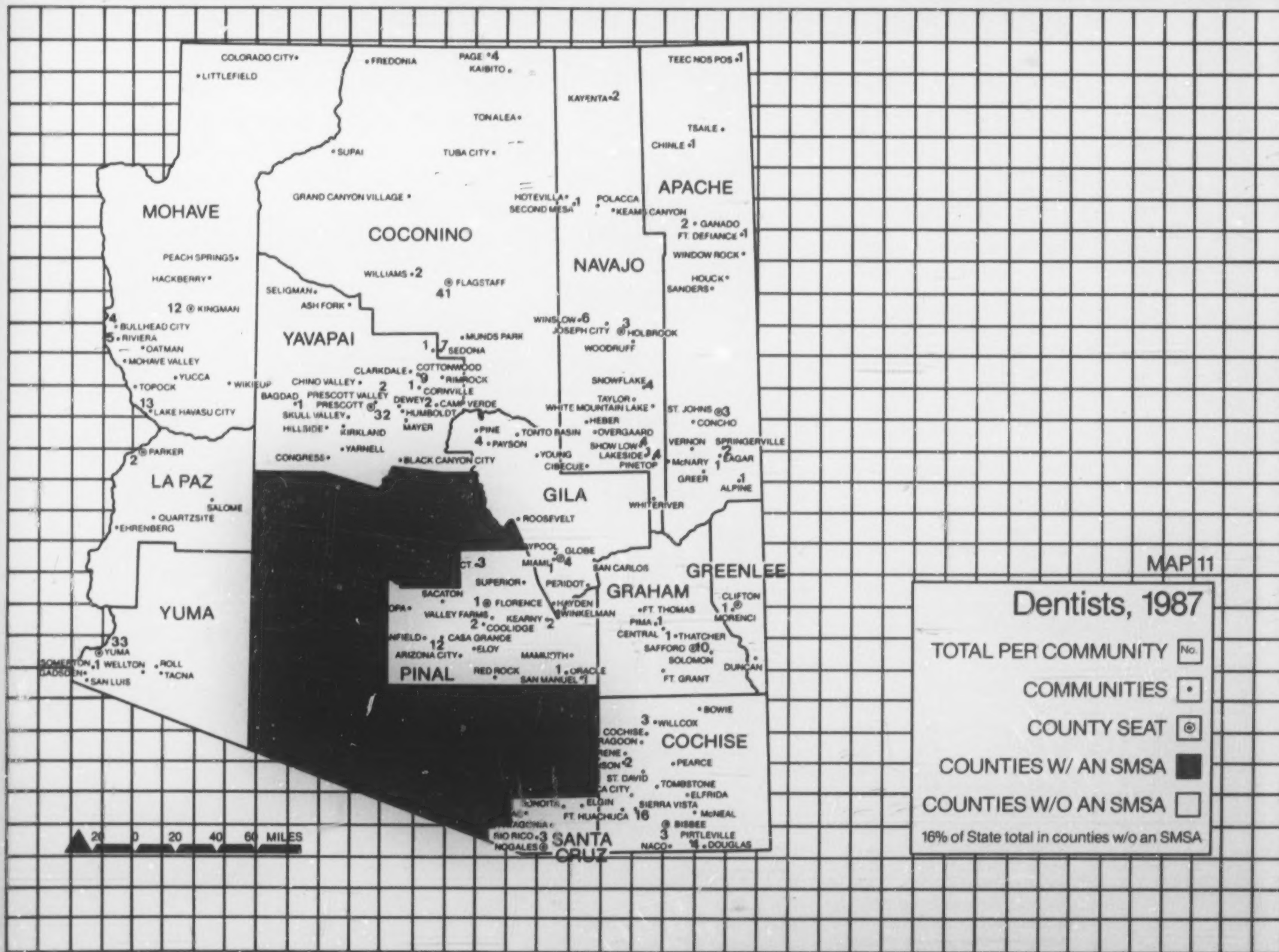


TABLE 11

LICENSED DENTISTS IN ARIZONA, 1987 BY COMMUNITY

Apache County		Greenlee County		Navajo County		Yavapai County	
Alpine	1	Morenci	1	Holbrook	3	Bagdad	1
Chinle	1	Total	1	Kayenta	2	Camp Verde	2
Eagar	1			Lakeside	1	Chino Valley	1
Ft. Defiance	1	La Paz County		Pinetop	4	Cornville	1
Ganado	2	Parker	2	Second Mesa	1	Cottonwood	9
Springerville	2	Total	2	Show Low	4	Prescott	32
St. Johns	3			Snowflake	4	Prescott Valley	2
Teec Nos Pos	1	Maricopa County		Winslow	6	Total	48
Total	12	Buckeye	3	Total	25		
		Carefree	3	Pima County		Yuma County	
Cochise County		Cave Creek	2	Ajo	1	Somerton	1
Benson	2	Chandler	27	Green Valley	6	Yuma	33
Bisbee	3	Chandler Heights	1	Sells	1	Total	34
Douglas	4	El Mirage	2	Tucson	374		
Sierra Vista	16	Fountain Hills	4	Total	382	Total Counties	
Willcox	3	Gilbert	6			Without an SMSA	285
Total	28	Glendale	85	Pinal County		Counties With an SMSA	
		Goodyear	2	Apache Junction	3	Maricopa	1,148
Coconino County		Litchfield Park	7	Casa Grande	12	Pima	382
Flagstaff	41	Mesa	153	Coolidge	2		1,530
Page	4	Paradise Valley	16	Florence	1		
Sedona	7	Peoria	12	Kearny	2	Arizona Total =	1,815
W. Sedona	1	Phoenix	555	Oracle	1		
Williams	2	Queen Creek	1	San Manuel	1		
Total	55	Scottsdale	136	Total	22		
		Sun City	24				
Gila County		Sun City West	7				
Globe	4	Sun Lakes	3	Santa Cruz County			
Miami	1	Tempe	90	Nogales	3		
Payson	4	Wickenburg	3	Total	3		
Total	9	Youngtown	6				
		Total	1,148				
Graham County		Mohave County					
Pima	1	Bullhead City	4				
Safford	10	Kingman	12				
Thatcher	1	Lake Havasu City	13				
Total	12	Riviera	5				
		Total	34				

Source: Arizona State Board of Dental Examiners, *Arizona Dental Directory*, 1986-1987.



Dietitians (RD) and Public Health Nutritionists in Arizona

Nutrition care providers are concerned with the complex interactions of food and nutrients and the factors that influence food selection and use by individuals, families and society.¹

A wide range of services in the community are provided by Registered Dietitians (RDs) and Public Health Nutritionists. Both have specialized training in the biological and behavioral sciences, food science, nutrition and food service management.

RDs must have a minimum of a baccalaureate degree, complete an accredited or approved work experience and pass a national registration exam.

Public health nutritionists usually have advanced training to assess community nutrition needs while maintaining the nutrition component of a health agency's service. Many public health nutritionists have met the requirements to be an RD.²

There are no licensing, registration or certifying requirements for the title of nutritionist in Arizona.

Nutrition services are available through County and Tribal Health Departments and the Indian Health Service.³ In Arizona, 9 of the state's County Health Departments are staffed by an RD, 5 counties (Cochise, Gila, Graham, Greenlee and Navajo) are staffed by well-qualified nutritionists, who provide reliable

nutrition information, and there are limited nutrition services in La Paz County.⁴

There are 645 members of the American Dietetic Association in Arizona and 55,000 members nationally. This includes retired, associate and dietetic technicians.⁵

The 1987 overall state ratio was 19 and 11 in the rural counties. Pima County exceeded the 1987 national ratio of 23.⁶

Most of the RDs and public health nutritionists and nutrition providers in Arizona (554 of 645) are located in Maricopa and Pima Counties. There are 19 in Coconino County, 18 in Yavapai County and 10 each in Cochise, Pinal and Yuma Counties. Graham and Santa Cruz Counties have 1 each.⁷

¹ Association of State and Territorial Health Officials Foundation, *Personnel in Public Health Nutrition*, 1982, pp.1-3

^{2,4} Interview with Sheryl Lee, manager of the Arizona Department of Health Services (ADHS), Office of Nutrition Services, May 29, 1987.

⁵ Figures provided by the American Dietetic Association and figures compiled from the Arizona Dietetic Association mailing list.

⁶ Information provided by the ADHS, Office of Nutrition Services, July 31, 1987.

⁷ Compiled from the Arizona Dietetic Association 1987 mailing list.

TABLE 12

REGISTERED DIETITIANS AND PUBLIC HEALTH NUTRITIONISTS IN ARIZONA, 1987 BY COUNTY

Counties Without an SMSA	Nutritionists	1987 Population ¹	Ratio ²
Apache	3	62,400	5
Cochise	10	100,300	10
Coconino	19	91,900	21
Gila	4	40,100	10
Graham	1	24,700	4
Greenlee	0	9,600	0
La Paz	2	14,200	14
Mohave	7	79,300	9
Navajo	6	75,700	8
Pinal	10	107,200	9
Santa Cruz	1	29,200	3
Yavapai	18	95,000	19
Yuma	10	89,500	11
	91	819,100	11

Counties With an SMSA

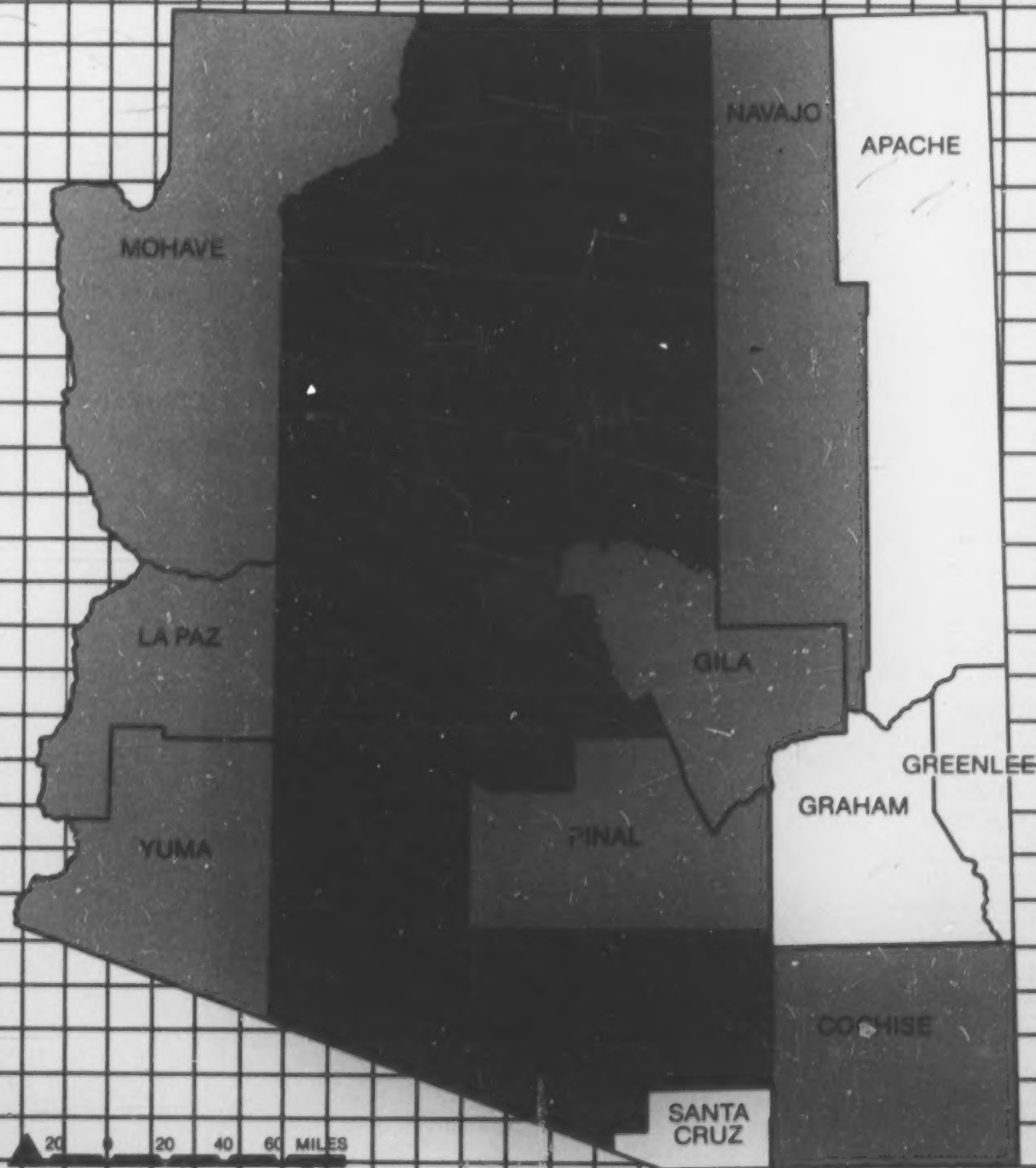
Maricopa	386	1,990,800	19
Pima	168	659,100	25
	554	2,649,900	21

Arizona Total = 645 3,469,000 19

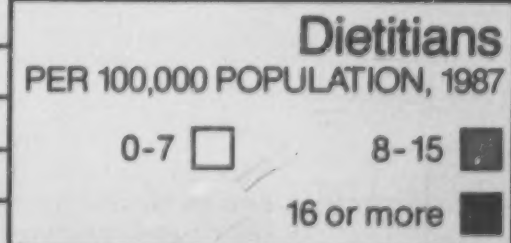
¹ Arizona Department of Economic Security, Population Statistics Unit, Table 1, Arizona Population Projections - Counties and Places 1986-2035, December, 1986.

² Nutritionists per 100,000 population.

Source: Arizona Department of Health Services, Office of Nutrition Services, Arizona Dietetic Association 1987 mailing list, May 28, 1987.



MAP 12



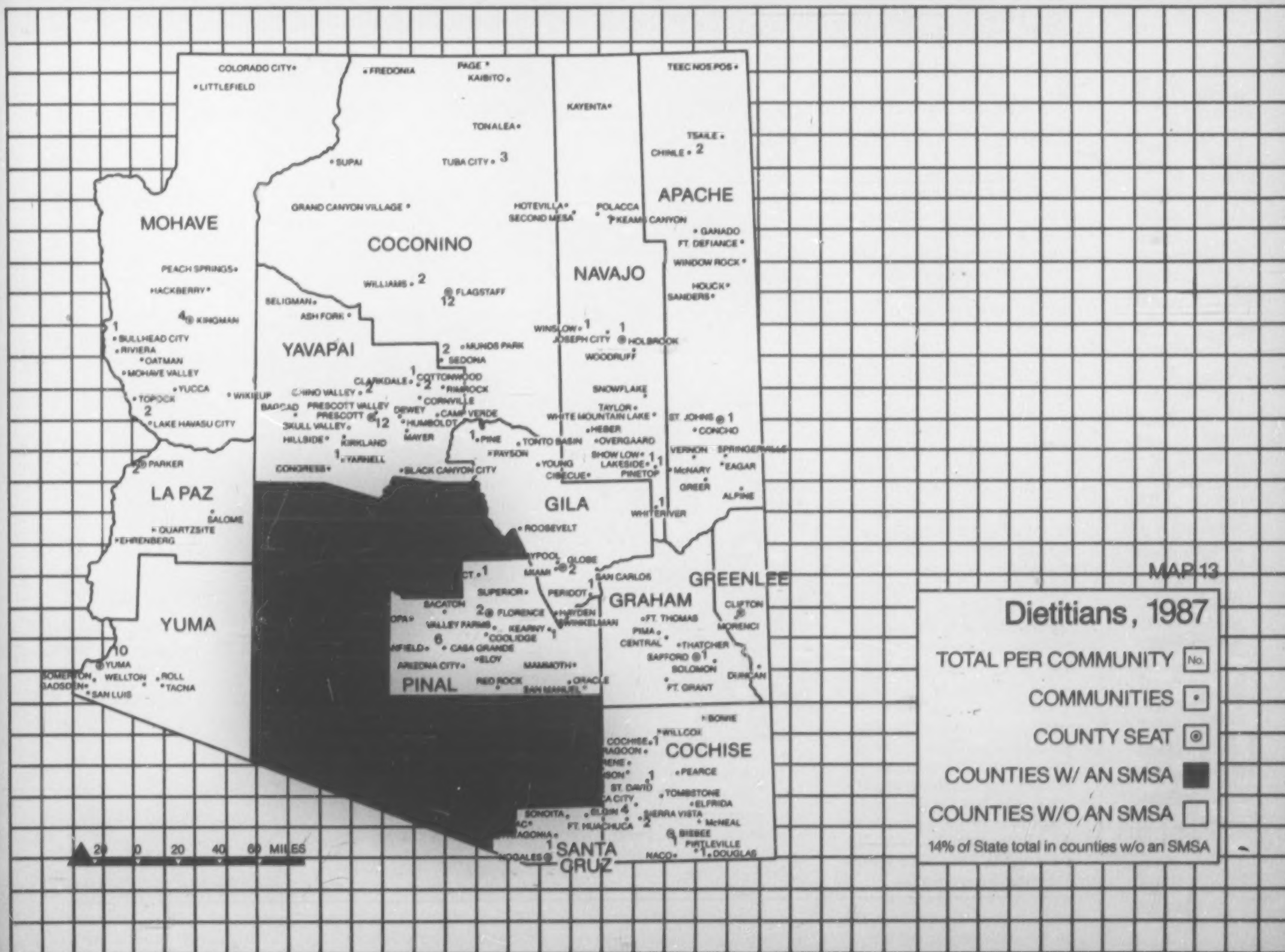
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TABLE 13

REGISTERED DIETITIANS AND PUBLIC HEALTH NUTRITIONISTS IN ARIZONA, 1987 BY COMMUNITY

Apache County		La Paz County		Pima County		Total Counties Without an SMSA	91
Chinle	2	Parker	2	Green Valley	4		
St. Johns	1	Total	2	Marana	1	Counties With an SMSA	
Total	3			Sells	1	Maricopa	386
		Maricopa County		Tucson	162	Pima	168
Cochise County		Chandler	29	Total	168		554
Bisbee	1	Fountain Hills	1			Arizona Total =	645
Cochise	1	Gilbert	4	Pinal County			
Douglas	1	Glendale	14	Apache Junction	1		
Fort Huachuca	4	Laveen	1	Casa Grande	6		
Sierra Vista	2	Litchfield Park	2	Florence	2		
St. David	1	Mesa	49	Kearny	1		
Total	10	Paradise Valley	6	Total	10		
		Peoria	5				
Coconino County		Phoenix	171	Santa Cruz County			
Flagstaff	12	Scottsdale	48	Nogales	1		
Sedona	2	Sun City	10	Total	1		
Tuba City	3	Sun Lakes	4				
Williams	2	Tempe	38	Yavapai County			
Total	19	Tonapah	1	Chino Valley	2		
		Wickenburg	2	Clarkdale	1		
Gila County		Youngtown	1	Cottonwood	2		
Globe	2	Total	386	Prescott	12		
Peridot	1			Yarnell	1		
Pine	1	Mohave County		Total	18		
Total	4	Bullhead City	1				
		Kingman	4	Yuma County			
Graham County		Lake Havasu	2	Yuma	10		
Safford	1	Total	7	Total	10		
Total	1						
Greenlee County		Navajo County					
Total	0	Holbrook	1				
		Keams Canyon	1				
		Lakeside	1				
		Pinetop	1				
		Whiteriver	1				
		Winslow	1				
		Total	8				

Source: Arizona Department of Health Services, Office of Nutrition Services, Arizona Dietetic Association 1987 mailing list, May 28, 1987.



Emergency Medical Technicians/Ambulance

Emergency Medical Technicians in Arizona

Emergency Medical Technicians (EMTs) are usually employed by ambulance services, rescue squads, fire departments and law enforcement agencies to respond to medical emergencies and provide immediate care to the critically injured or ill.

There were more than 6,500 certified EMTs in Arizona as of March, 1987. Approximately 61% of those were employed by emergency medical service provider agencies — a majority of those by ambulance services and fire departments.¹

There are 3 levels of certified EMTs in Arizona: Basic EMTs; Intermediate EMTs; and Paramedics. Paramedics and Intermediate EMTs need to have a high school degree or an equivalent to enter the training program, but there are no minimum requirements for Basic EMTs.

Basic EMTs are the most numerous of the 3 levels. They are authorized to perform the following basic life support skills: recognize an emergency; obtain and interpret diagnostic signs; perform basic cardiac life support; control hemorrhaging; stabilize and put splints on fractures; administer oxygen; administer to behavioral emergencies; assist in childbirth; and handle patients to minimize additional injuries.

TABLE 14

CERTIFIED EMERGENCY MEDICAL TECHNICIANS IN ARIZONA, 1987 BY COUNTY

Counties Without an SMSA	Emergency Medical Technicians				1987 Population ¹	Ratio ²
	BASIC ³	IEMT ⁴	IEMT-C ⁵	PARAMEDIC		
Apache	135	5	0	0	82,400	216
Cochise	185	15	0	5	100,300	184
Coconino	384	44	6	23	91,900	418
Gila	105	10	2	3	40,100	262
Graham	66	0	0	1	24,700	267
Greenlee	29	0	0	0	9,600	302
La Paz	31	7	2	1	14,200	218
Mohave	263	32	21	12	79,300	332
Navajo	163	10	0	3	75,700	215
Pinal	186	18	2	7	107,200	173
Santa Cruz	80	1	1	1	29,200	274
Yavapai	266	34	13	16	95,000	280
Yuma	153	23	6	5	89,500	171
	2,046	199	53	77	819,100	250
Counties With an SMSA						
Maricopa	2,519	93	38	464	1,990,800	126
Pima	994	44	6	162	659,100	151
	3,513	137	44	626	2,649,900	133
Arizona Total =	5,559	336	97	703	3,469,000	160

¹ Arizona Department of Economic Security, Population Statistics Unit, Table 1, Arizona Population Projections - Counties and Places 1986-2035, December, 1986.

² Basic EMTs per 100,000 population.

³ Basic Emergency Medical Technician.

⁴ Intermediate Emergency Medical Technician.

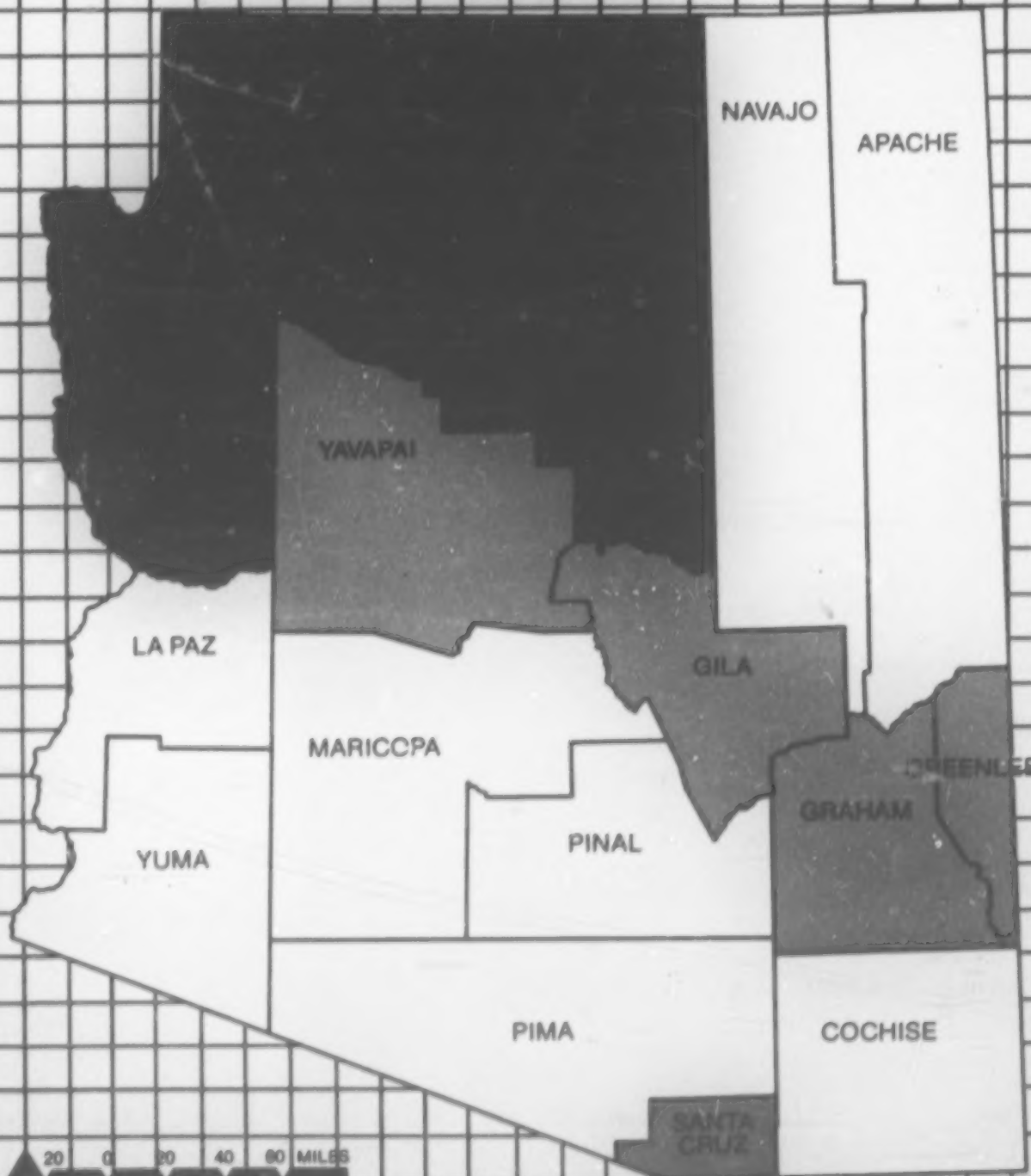
⁵ Intermediate Emergency Medical Technician with specialized cardiac training.

Source: The Office of Emergency Medical Services Training and Certification, Division of Emergency Medical Services and Health Care Facilities, Computer list of active EMTs in Arizona, by County, March, 1987.

Intermediate EMTs make up the second level. In addition to having the above skills,

IEMTs are certified competent in certain advanced life support techniques. Working under the

control of an emergency physician at a base hospital, IEMTs may perform basic airway



MAP 14

**Emergency
Medical Technicians**
PER 100,000 POPULATION, 1987

126-222 ☐ 223-319 ☐
320 or more ☐

20 0 20 40 60 MILES

maintenance techniques, intravenous fluid therapy and parenteral drug therapy. About 22% of Arizona's IEMTs are certified to perform advanced cardiac life support functions.

Paramedics occupy the highest certification level. Besides all of the previously mentioned skills, paramedics can administer a larger selection of drugs and perform somewhat more sophisticated procedures.

Regardless of level, EMTs are trained to meet nationally acceptable standards. Individuals must be state certified every 2 years and participate in ongoing, continuing education courses.

There has been an increase in the actual number of all types of EMTs in Arizona. In 1984, the overall state ratio of basic EMTs

in Arizona per 100,000 population was 114 and 186 in the rural counties. In 1987 the overall state ratio was 160 and even higher (250) in the rural counties.

Even though Arizona's ratio surpassed the 1986 national ratio of 138², many small, isolated communities in the state still are not adequately served in emergency situations.

¹ Information provided by Victor Dominguez, chief of the Office of Emergency Medical Services Training and Certification, Division of Emergency Medical Services and Health Care Facilities, June 26, 1987.

² Information provided by the National Emergency Medical Services Clearinghouse, July 31, 1987.

TABLE 15

AMBULANCE SERVICES IN ARIZONA, 1987 BY COMMUNITY

County	Ambulance Services	BLS ¹	ALS ²
Apache County			
Alpine	White Mountains	—	Yes
Ganado	Sage Memorial	Yes	—
Greer	White Mountains	—	Yes
McNary	IHS-Whiteriver	Yes	—
Springerville	White Mountains	—	Yes
St. Johns	St. Johns	Yes	—
Total		3	3

County	Ambulance Services	BLS ¹	ALS ²
Cochise County			
Benson	Cochise County	—	Yes
Bowie	Chiricahua	Yes	—
Cochise	Chiricahua	Yes	—
Douglas	Douglas F.D.	Yes	—
Elfrida	Elfrida F.D.	Yes	—
Pearce	Pearce-Sunsites F.D.	Yes	—
San Simon	Chiricahua	Yes	—
Sierra Vista	Sierra Vista F.D.	—	Yes
Tombstone	Tombstone	Yes	—
Willcox	Chiricahua	Yes	—
Total		8	2
Coconino County			
Bellemont	Guardian	—	Yes
Flagstaff	Guardian	—	Yes
Grand Canyon	Eddingfield	—	Yes
Kachina	Guardian/Pinewood	—	Yes
Mountaineer	Guardian/Pinewood	Yes	—
Munds Parks	Guardian/Pinewood	Yes	—
Page	Page F.D.	—	Yes
Sedona	Sedona F.D.	—	Yes
Williams	Eddingfield	—	Yes
Total		2	7
Gila County			
Claypool	Copper State	—	Yes
Globe	Copper State	—	Yes
Payson	Canyon State	—	Yes
Peridot	IHS-San Carlos	Yes	—
Pine-Strawberry	Pine-Strawberry F.D.	Yes	—
Total		2	3
Graham County			
Pima	Kords	Yes	—
Safford	Kords	—	Yes
Total		1	1
Greenlee County			
Clifton	Greenlee County	Yes	—
Total		1	0
La Paz County			
Parker	Parker	—	Yes
Salome	Parker/Wickenburg	—	Yes
Total		0	2

County	Ambulance Services	BLS ¹	ALS ²
Maricopa County			
Total		2	14
Mohave County			
Bullhead City	Bullhead City F.D.	—	Yes
Chloride	Stat	—	Yes
Colorado City	Colorado City F.D.	Yes	—
Golden Valley	Stat	—	Yes
Kingman	Stat	—	Yes
Lake Havasu City	Stat Havamedic	Yes	—
Mohave Valley	Mohave Valley F.D.	Yes	—
Oatman	Golden Shores/ Mohave Valley F.D.	Yes	—
Topock	Golden Shores	Yes	—
Yucca	Stat	—	Yes
Total		5	5
Navajo County			
Heber	Heber-Overgaard F.D.	Yes	—
Kayenta	IHS-Navajo Nation	Yes	—
Keams Canyon	Hopi Tribe	—	Yes
Oraibi	Hopi Tribe	—	Yes
Overgaard	Heber-Overgaard F.D.	Yes	—
Show Low	Kords	Yes	—
Taylor	Taylor/Snowflake	—	Yes
Whiteriver	IHS-Whiteriver	Yes	—
Winslow	Roadrunner	Yes	—
Total		6	3
Pima County			
Total		2	8
Pinal County			
Apache Junction	Associated/Southwest	—	Yes
Arizona City	Associated/ Sun Lakes F.D.	—	Yes
Casa Grande	Southwest	—	Yes
Coolidge	Coolidge F.D.	—	Yes
Eloy	Eloy F.D.	—	Yes
Florence	Tempest	—	Yes
Kearny	Kearny Police Dept.	Yes	—
Maricopa	Southwest	—	Yes
Mammoth	Tri-City Med	—	Yes
Sacaton	IHS-Sacaton	Yes	—

County	Ambulance Services	BLS ¹	ALS ²
San Manuel			
Superior	Tri-City Med Superior F.D.	— Yes	Yes —
Total		3	9
Santa Cruz County			
Nogales	Nogales F.D.	Yes	—
Rio Rico	Rio Rico F.D.	Yes	—
Tubac	Tubac F.D.	—	Yes
Total		2	1
Yavapai County			
Ash Fork	Eddingfield	—	Yes
Black Canyon City	Canyon Rescue	—	Yes
Bagdad	Cyprus/Bagdad	Yes	—
Camp Verde	Camp Verde Clinic Assoc.	—	Yes
Chino Valley	Lifeline	—	Yes
Clarkdale	Verde Valley	—	Yes
Cornville	Verde Valley	—	Yes
Cottonwood	Verde Valley	—	Yes
Lake Montezuma	Montezuma/Rimrock	—	Yes
Mayer	Lifeline	—	Yes
Prescott	Lifeline	—	Yes
Seligman	Eddingfield	—	Yes
Total		1	10
Yuma County			
Wellton	Tri-Valley	Yes	—
Yuma	Rural Metro	—	Yes
Total		1	1
Total Counties Without an SMSA			
		33	48
Counties With an SMSA			
Maricopa		2	14
Pima		2	8
		4	22
Arizona Total =		37	70

¹ Basic Life Support Service

² Advanced Life Support Service.

Note: F.D. = Fire Department; and IHS = Indian Health Service.

Source: Doug Leach, ambulance program supervisor, Office of Ambulance Licensing and Certification, Division of Emergency Medical Services and Health Care Facilities, Arizona Department of Health Services, June 26, 1987.

Indian Health Service

Federal health services for Indians began under the auspices of the War Department in the early 1800s. The Indian program was transferred from the War Department to the Department of the Interior, which was newly created in 1849 to manage the nation's resources.

Professional medical supervision of Indian health activities began in 1908 when the position of Chief Medical Supervisor was established. Proposals to transfer health service programs for Indians to the Public Health Services were made as early as 1919. However, it wasn't until 1955 that the Indian Health program became a primary responsibility of the Public Health Service under Public Law 568.

The Indian Health Service (IHS), as it is known today, is only 32 years old. It presently provides comprehensive preventive and curative health service to approximately 880,000 American Indians and Alaska Natives located in 28 states. Direct and contract health services are provided by approximately 11,000 professional and administrative support personnel in 45 hospitals, 72 health centers and several hundred other smaller satellite stations and facilities.¹

The Indian Health Service is a Federal/tribal partnership which is designed to assure the availability of a comprehensive

health service delivery system. It provides Indians and Alaska Natives opportunities to maximize involvement in defining and meeting their own health needs.

Most Indian Health Service hospitals and clinics will be turned over to Native American tribal organizations within the next 10 years in an effort to decrease federal control while advancing "Indian self-determination."² Tribes already run 5 hospitals, 63 health centers and more than 200 other facilities.

The stated mission of the Indian Health Service notes this trend in the following objectives.

In the first, the IHS strives to deliver: the highest quality, comprehensive health and ambulatory medical care; preventive and rehabilitative services; and community environmental health programs, including the construction of individual water and sanitation facilities.

In the second, IHS assists tribes and Native corporations to develop their capacity to staff and manage health programs and provide them with every opportunity to assume operational authority for programs, if they so choose.

Thirdly, the IHS acts as the Indians' and Alaska Natives' Federal advocate in health related matters.

Outcomes of IHS programs, measured by the death rate

TABLE 16

TRIBAL CLASSIFICATION OF ARIZONA RESERVATIONS

Reservation	Classification	Acreage
AK-CHIN	Papago-Pima	21,840
CAMP VERDE	Yavapai-Apache	653
COCOPAH	Cocopah	6,009
COLORADO RIVER	Mohave-Chemehuevi	225,995
FORT APACHE	Apache	1,664,972
FORT McDOWELL	Yavapai	24,680
FORT MOHAVE	Mohave	32,679*
FORT YUMA	Quechan	43,561*
GILA RIVER	Pima-Maricopa	371,933
HAVASUPAI	Havasupai	188,077
HOPi	Hopi	1,561,213
HUALAPAI	Hualapai	992,463
KAIBAB-PAIUTE	Paiute	120,413
NAVAJO	Navajo	14,775,068†
PASCUA-YAQUI (inc. SAN XAVIER)	Pascua-Yaqui	892
SALT RIVER	Pima-Maricopa	49,293
SAN CARLOS	Apache	1,827,541
TOHONO O'ODHAM (formerly Papago) (inc. GILA BEND)	Tohono O'Odham	2,855,969
TONTO-APACHE	Tonto-Apache	85
YAVAPAI-PRESCOTT	Yavapai	1,399
		24,764,735

* Includes Arizona and California

† Includes Arizona, Utah and New Mexico

Adapted from: 1985-1986 Annual Report of Arizona Indian Tribes, The Commission of Indian Affairs, Phoenix, September 1986, p. 6.

among American Indian babies per 1,000 live births, have been remarkable. In the mid-1950s, the death rate for Indian babies stood at 62.7 per 1,000 live births. Figures covering the period 1982-1984 stand at 10.2²

per 1,000 live births, a lower rate than for the entire U.S. population (11.2/1,000 for the 1983 population as a whole, 16.8/1,000 for all non-whites, 19.2/1,000 for blacks).³

Indian Health Service in Arizona: Navajo, Phoenix, and Tucson Offices

About 152,000⁴ American Indians resided in Arizona in 1980, which was 6% of the state's total population. Most of them were living on 1 of 20 reservations in the state (see map). While some of the tribes have common historical experiences, as well as languages and similar lifestyles, each tribe remains unique.

Most tribes in Arizona share a common resource — the Indian Health Service. Recent policies find the IHS intensifying programs for Indian communities in cooperation with the tribes and the state.

In Arizona, there are 3 IHS Offices — the Phoenix and Navajo Area Offices and the Tucson Program Office. Each of the offices serves as a headquarters for the IHS health facilities located on the reservation. The Phoenix Area administers programs to the largest number of reservations. The Navajo Area serves the Navajo Reservation and the Tucson Program serves the Tohono O'Odham and Pascua Yaqui tribes.

Navajo Area IHS

The Navajo Area IHS covers 6 major health facilities in 3 counties (Apache, Coconino and Navajo). Although the Hopi reservation is located within the Navajo reservation (see map), the Hopi tribe's health care is

provided under the Phoenix Area IHS. The Navajo Area IHS serves only the Navajo tribe, which numbered approximately 76,052 Navajos living on the reservation in 1980.⁵ The reservation spans part of 3 of Arizona's 15 counties (Apache, Coconino and Navajo).

Of the 6 health facilities in the Navajo Area IHS, the newest is at Chinle — upgraded in August of 1984 from a clinic to a 60-bed hospital. The other 5 major facilities are: 2 inpatient and outpatient hospitals located in Tuba City (95 beds) and Ft. Defiance (49 beds); an outpatient health center in Winslow; and 2 outpatient clinics in Tsaile and Kayenta.⁶ Other small ambulatory clinics are located in Dilkon, Leupp, Rough Rock, Teec Nos Pos, Toyey and Inscription House.

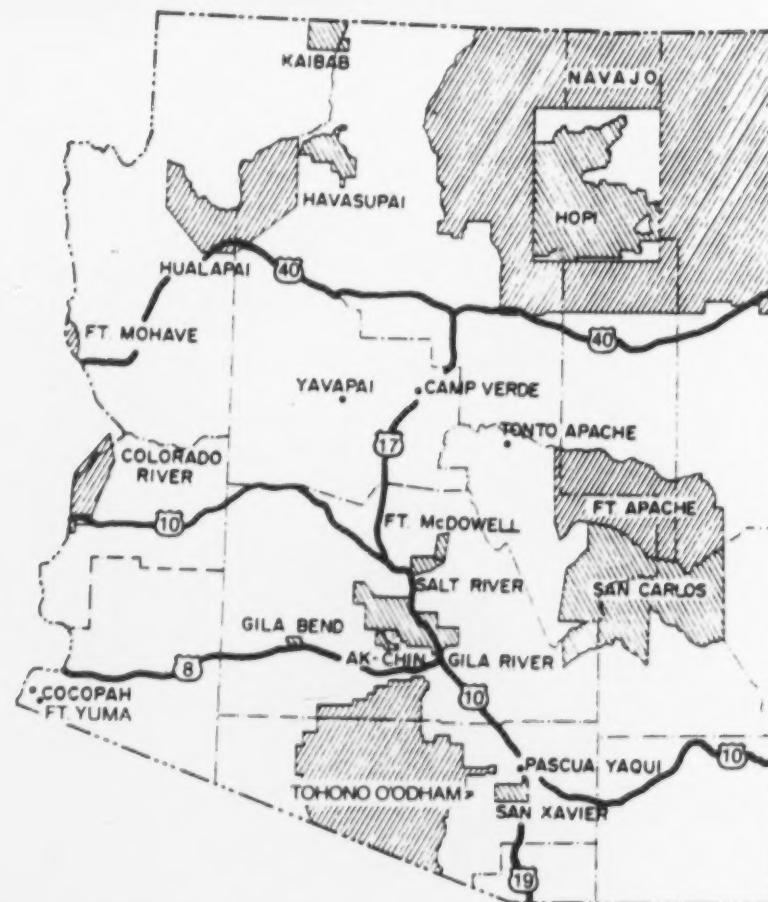
The Navajo Area IHS once served the 45-bed hospital in Ganado (Apache County) and a clinic in Kaibito (Coconino County). The Ganado facility is now a non-profit hospital operated by the Indian community. The Kaibito clinic is now under private ownership, although facilities are leased from IHS.

Phoenix Area IHS

The Phoenix Area IHS includes IHS facilities in Utah and Nevada along with the largest number of IHS facilities in Arizona (see map showing Phoenix area boundaries).

MAP 15

INDIAN RESERVATIONS IN ARIZONA



The Phoenix Area serves most of the federally recognized tribes in Arizona. They are the Ak-Chin, Cocopah, Colorado River, Ft. McDowell Yavapai-Apache, Gila River, Havasupai, Hopi, Hualapai, Mohave, Quechan, Salt River Pima-Maricopa, San Carlos Apache and White Mountain Apache. Contracts with local physicians and facilities provide health care services for the Camp Verde

Yavapai-Apache, Kaibab-Paiute, Pascua-Yaqui, Yavapai-Prescott and Tonto Apache.

The Phoenix Area IHS covers 10 major health facilities in 8 counties (Coconino, Gila, La Paz, Maricopa, Mohave, Navajo, Pinal and Yuma). Phoenix Indian Medical Center (PIMC) is the largest IHS facility in the state with 143 beds, providing emergency inpatient, outpatient,

(continued on page 48)

TABLE 17

INDIAN HEALTH SERVICE PHYSICIANS IN ARIZONA, 1987 BY COUNTY

Counties Without an SMSA	Navajo Area	Phoenix Area	Tucson Program	Total	1980 Indian Population ¹	Ratio ²
Apache	40	0	0	40	39,024	102
Cochise	0	0	0	0	489	0
Coconino	23	0	0	23	20,904	110
Gila	0	7	0	7	5,083	138
Graham	0	0	0	0	2,740	0
Greenlee	0	0	0	0	229	0
La Paz	0	5	0	5	1,941	258
Mohave	0	1	0	1	1,462	68
Navajo	19	19	0	38	32,122	118
Pinal	0	6	0	6	8,487	71
Santa Cruz	0	0	0	0	57	0
Yavapai	0	0	0	0	997	0
Yuma	0	4	0	4	1,295	309
	82	42	0	124	114,830	108
Counties With an SMSA						
Maricop	0	49	0	49	22,788	215
Pima	0	0	12	12	14,880	81
	0	49	12	61	37,668	162
Arizona Total =	82	91	12	185	152,498	121

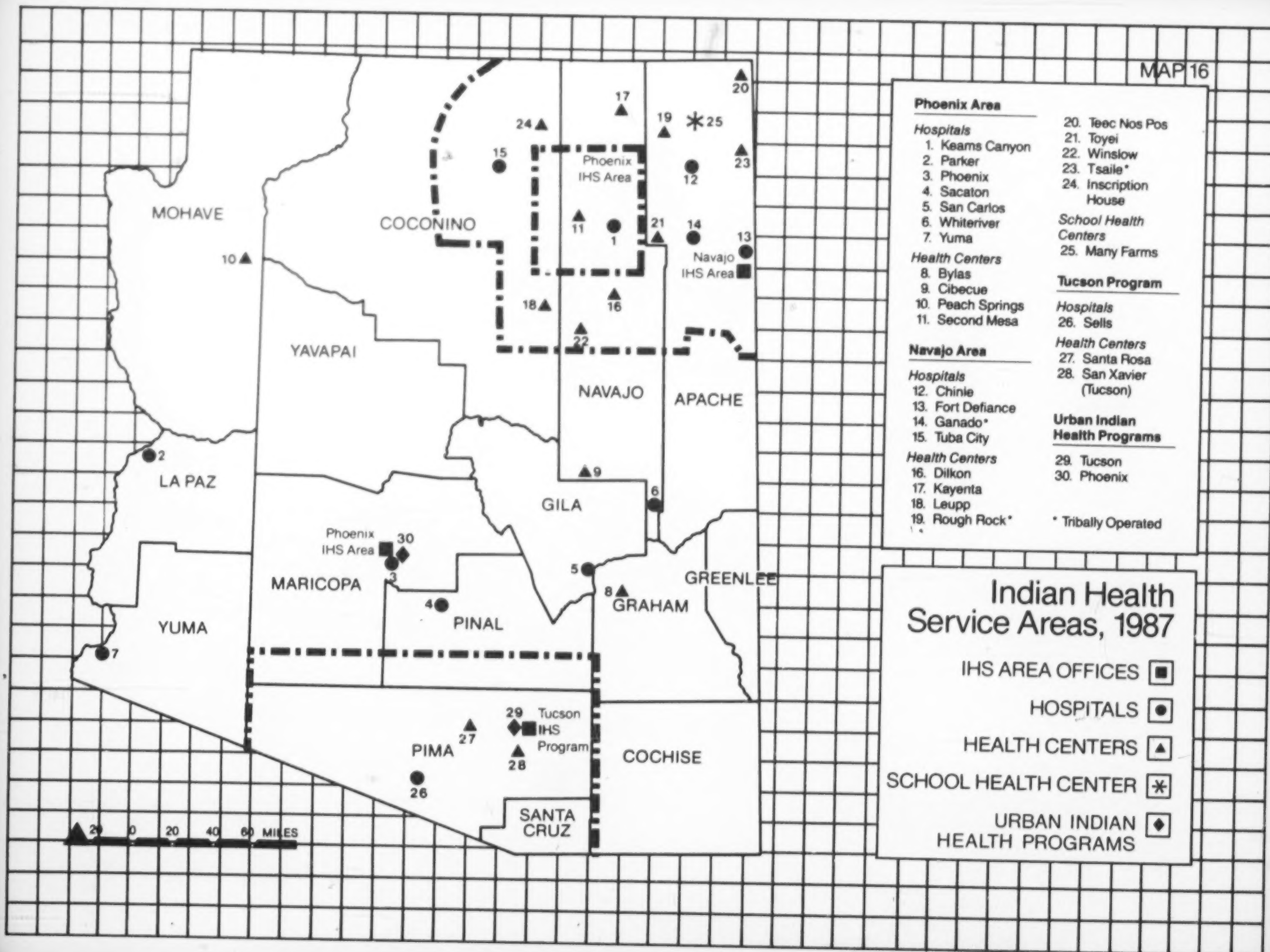
¹ Arizona Department of Economic Security, Arizona State Data Center, Population Statistics Unit Office of Data Administration, July 7, 1982. Total for Arizona Indian Populations Living On and Off Reservations, 1980, Table III. There are wide variations in estimates of Arizona's Indian population for 1987. Definitions are not always consistent regarding Indian population living on and off the reservation, and reservation population figures may include other states. After reviewing numerous references it was determined that the census data for 1980 would be conservative but consistent for trend analysis. References reviewed include:

- 1.) *A Demographic Guide to Arizona, 1985*, Arizona Department of Economic Security, Population Statistics Unit, Report No. 14, August, 1986. Table C-4, p. 64, "Arizona Indian Reservation Population: 1980" indicated a state total of 129,254. Data on Indian populations living off the reservation were not available.
- 2.) *Arizona Annual Planning Information 1987-1988*, Arizona Department of Economic Security, Research Administration, November, 1986, p. 221. Table on "Reservation Population by County" indicated a state total of 150,340. Data on Indian population living off reservations was not available.
- 3.) Indian Service Population and Labor Force Estimates, Bureau of Indian Affairs, January, 1987. Table 1 - "Local Estimates of Resident Indian Population and Labor Force Status; Indians Living On and Adjacent to Reservations: Summary By State: January, 1987" indicated a state total of 162,854.

4.) *Annual Report of Arizona Indian Tribes 1985-86*, The Commission of Indian Affairs, September, 1986, p. 6. Table on "Population and Acreage of Arizona Reservations" indicated a state total of 244,587. The Navajo Reservation population (172,020) included Arizona, Utah and New Mexico. Another reference for Navajo Population: Navajo Area Indian Health Service, Office of Program Planning estimated Navajo Area Population fiscal year 1987 at 176,126 including Arizona, Utah and New Mexico.

² IHS Physicians per 100,000 Indian Population.

Source: Interviews with the following: Gordon Jensen and Mary Beth Skupien, Phoenix Area IHS; Jenny Notah, Navajo HSA; Dorothy George, Elsie Johnson, Anne Marcus, Dr. Micki McDonald, Robert Pipe, Laurie Smith, Navajo Area IHS; and Dr. Ernest Johnson, Tucson Program IHS.



(continued from page 45)

dental, community health care and other services. It performs a dual role as both a primary care provider and as a secondary level specialty care referral center for the Phoenix Area IHS.

Other facilities in the Phoenix Area office jurisdiction include: inpatient and outpatient facilities located in Sacaton (20 beds), Yuma (17 beds), San Carlos (28 beds), Whiteriver (47 beds), Keams Canyon (26 beds) and Parker (20 beds); outpatient health centers in Bylas, Cibecue and Peach Springs; and outpatient clinics in Second Mesa and a part-time clinic in Chemehuevi.

Tucson Program IHS

The Tohono O'Odham (formerly the Papago Tribe) and the Pascua Yaqui are the 2 major tribes served by the Tucson Program IHS Area.

There are 2 functional responsibilities within the Tucson Program IHS. The first is to provide health services to eligible persons either directly or through contract facilities administered or approved by IHS. The second is to conduct research, develop programs and provide training activities to assist in more effective and efficient management and administration of all IHS programs.⁷

The 40-bed IHS inpatient and outpatient facility in Sells is the primary source of health care for the Tohono O'Odham

TABLE 18

NAVAJO AREA - INDIAN HEALTH SERVICE PROVIDERS, 1987

	Physicians/DO, MD	Physician Assts.	Nurse Practitioner	Nurses RN	Nurses LPN	Pharmacists	Dentists	Optometrists	Total
Counties Without an SMSA									
Apache County									
Chinle	24 (22)	3	2	59	15	6	7	1	117
Ft. Defiance/Window Rock	15 (14)	1	0	50	21	6	4	1	98
Tsaile	1 (1)	0	1	3	1	1	1	1	9
Coconino County									
Tuba City	23 (19)	3	1	40	24	6	5	2	104
Navajo County									
Kayenta	11 (10)	2*	0	6	2	2	2	3*	28
Winslow	8 (7)	1	0	8	4	2	3	1	27
	82 (73)	10	4	166	67	23	22	9	383
Total Counties With an SMSA									
	0 (0)	0	0	0	0	0	0	0	0
Navajo Area Indian Health Service Total =									
	82 (73)	10	4	166	67	23	22	9	383

Note: * Providers who are private contractors and/or under contract with the Federal government.

() Number of Primary Care Physicians also included in total.

Source: Interviews with Jenny Notah; Dorothy George, Tuba City; Elsie Johnson, Ft. Defiance; Anne Marcus, Winslow; Dr. Micki McDonald, Kayenta; Robert Pipe, Tsaile; and Laurie Smith, Chinle.

people. There are also the following field clinics: the Santa Rosa Health Center; San Xavier Clinic; and 2 trailers used as satellite health facilities at Pisinemo and Vaya Chin.⁸

The Pascua Yaqui tribe currently receives its health care through a contractual agreement between a health maintenance organization (HMO) and the IHS.

¹ Phoenix Area Indian Health Service, *Organization Report*, 1984.

² McGraw-Hill's Healthcare Information Center, *Medicine and Health Newsletter*, Vol. 41, No. 18, Washington D.C., May 4, 1987, p. 2.

³ Death Rate for Indian Babies Dips, *The Arizona Republic*, May, 15, 1987, as reported in *The Arizona Family Planning Council Newsletter, Council Comments*, Vol. 36:6, June, 1987.

⁴ Arizona Department of Economic Security (ADES), Population Statistics Unit office of Data Administration, July, 7, 1982. Total for Arizona Indian Populations Living on and off Reservations, 1980, Table III.

⁵ ADES, Population Statistics Unit, *A Demographic Guide to Arizona 1985*, Report No. 14, Table C-4, August, 1986, p. 64.

⁶ Interviews with the following Public Health Service Administration and Personnel: Dorothy George, Tuba City; Elsie Johnson, Ft. Defiance; Anne Marcus, Winslow; Dr. Micki McDonald, Kayenta; Robert Pipe, Tsalle; and Laurie Smith, Chinle; June 1 and 2, 1987.

⁷ U.S. Department of Health and Human Services, Public Health Service, Indian Health Service, Division of Health Systems Development, Tucson, *Tucson Program Area Profile*, March, 1986.

⁸ Interview with Dr. Ernest Johnson, director of the Sells Service Unit, June 1, 1987.

TABLE 19

PHOENIX AREA - INDIAN HEALTH SERVICE PROVIDERS, 1987

<i>Counties Without an SMSA</i>	Physicians/DO, MD	Physician Assts.	Nurse Practitioner	Nurses RN	Nurses LPN	Pharmacists	Dentists	Optometrists	Total
Coconino County									
Supai	0 (0)	1	0	0	0	0	0	0	1
Gila County									
San Carlos	7 (7)	2	0	24	6	3	2	1	45
La Paz County									
Parker	5 (4)	1	0	12	4	2	1	0	25
Mohave County									
Peach Springs	1 (1)	1	0	2	0	1	1	0	6
Navajo County									
Cibecue	1 (1)	0	0	3	0	1	1	0	6
Keams Canyon	7 (7)	1	0	21	11	4	3	1	48
Whiteriver	11 (11)	2	1	58	14	8	3	1	98
Pinal County									
Sacaton	6 (6)	1	0	16	6	3	3*	0	35
Yuma County									
Yuma	4 (4)	0	0	11	0	2	1	0	18
	42 (41)	9	1	147	41	24	15	3	282
Counties With an SMSA									
Maricopa County									
Phoenix	49 (31)	2	4	156	46	10	9	2	278
	49 (31)	2	4	156	46	10	9	2	278
Phoenix Area Indian Health Service Total =	91 (72)	11	5	303	87	34	24	5	560

Note: * Providers who are private contractors and/or under contract with the Federal government.

() Number of Primary Care Physicians also included in total.

Source: Interviews with Gordon Jensen and Mary Beth Skupien of the Phoenix Area IHS.

TABLE 20

TUCSON PROGRAM - INDIAN HEALTH SERVICE PROVIDERS, 1987

Counties With an SMSA	Physicians/DO, MD	Physician Assts.	Nurse Practitioner	Nurses RN	Nurses LPN	Pharmacists	Dentists	Optometrists	Total
Pima County Sells*	12 (12)	3	0	26	15	5	3	0	64
Total Counties Without an SMSA	0 (0)	0	0	0	0	0	0	0	0
Tucson Program Indian Health Service Total =	12 (12)	3	0	26	15	5	3	0	64

Note: * Sells includes 2 field clinics - Santa Rosa Health Center which is always staffed by a physician, physician assistant, RN and LPN, and San Xavier Clinic which always has 2 physicians, 2 RNs, 1 pharmacist and a dentist.

() Number of Primary Care Physicians also included in total.

Source: Interview with Dr. Ernest Johnson, director of the Sells Service Unit, Tucson Program IHS.

Midwives in Arizona

Midwifery is an ancient and honored profession known from the earliest times and in every culture. The first formal training for midwives was initiated by Hippocrates in the 5th Century, B.C.

There are 2 levels of midwifery in Arizona. The first is the Certified Nurse-Midwife (CNM). They are registered nurses (RNs) who have obtained additional education and training in the care and delivery of essentially healthy and normal mothers.

The second is the Licensed Midwife (LM). They may be trained nurses but most often are not. Licensure requires successful completion of an approved program of study. Typical training lasts 3 years and includes theoretical and clinical components.

Certified Nurse-Midwives (CNM)

A certified nurse-midwife is educated in the 2 disciplines of nursing and midwifery and must possess evidence of certification according to the requirements of the American College of Nurse-Midwives (ACNM). There were more than 20 institutions in the United States offering a CNM-approved basic education in nurse-midwifery, internship programs or refresher programs as of 1980. In Arizona the nurse-midwife was the first of 7 nurse practitioner specialty areas put into rules and regulations of the Arizona State Board of Nursing.¹

The nurse-midwife provides care for the normally healthy mother during pregnancy and stays with her during labor, providing continuous physical and emotional support. She evaluates and provides immediate care for the normally healthy newborn. She helps the mother to care for herself and for her infant, to adjust the home situation to the new child and to lay a healthful foundation for future pregnancies through family planning and gynecological services.

Nurse-midwives are permitted to deliver in hospitals. They usually work in association with, and under the supervision of, a physician — generally an obstetrician. High risk mothers (those with major medical or obstetrical problems) or mothers

who develop complications during pregnancy are referred to physicians for their prenatal care and delivery or are collaboratively managed.²

The number of CNMs nationally has increased sharply in recent years, reflecting the steadily-rising demand for their services. In the past, midwives mainly cared for the poor in areas where doctors were scarce. More recently, their services are also sought by middle- and upper-income couples seeking family-centered, more personalized holistic care. In 1978, there were an estimated 2,200 nurse-midwives in the United States.³ In 1986, the number had risen to 3,087.⁴

In 1987, Nursing Board records showed a total of 62 CNMs in the state. This figure represents all registered nurses indicating a practice specialty area in midwifery. It does not indicate whether they are actually delivering babies. In addition, not all Indian Health Service (IHS) midwives practicing on the Navajo Reservation are represented in the total. They are not required to hold an Arizona license, although most do.

Interviews in 1987 showed that there were approximately 45 CNMs delivering babies and working in at least 12 settings in Arizona. These settings included Indian Health Service

hospitals, county and community hospitals in Maricopa and Pima Counties, community-based primary care centers, private physicians' offices, birthing centers and, rarely, in their own private practices.

Nurse midwives attended 4% of all deliveries in the state in 1985 (2,400 of 59,344 births). In some rural counties, such as Apache County, nurse midwives delivered more than 50% of the total county births.

In the metropolitan counties, there were 24 CNMs practicing midwifery out of a total of 45. In the rural counties, 21 out of 21 were delivering babies: 11 in Apache County; 7 in Coconino County; 1 in Navajo County; and 2 in Yavapai County. Of the 21 CNMs, 8 federal IHS midwives did not show up in the state data because they were not licensed in Arizona. One of the 21 rural midwives is male.⁵

Midwives

Licensed Midwives (LM)

A licensed midwife is equivalent to a direct-entry midwife in European countries. LMs are educated in the field of midwifery with training incorporating needed nursing skills.

There are 3 educational programs approved by the Arizona Department of Health Services (ADHS), the regulatory body governing licensed midwifery. Two of these are out of state programs and the third, an associate degree program for the state's community college system, has been approved but is currently not available.

Arizona was the first state to directly address the needs and problems brought on by the "homebirth movement" of the 1970s. In 1978, Arizona adopted rules to govern the practice of midwifery and now there are 15 to 20 states with such rules.

LMs provide care for healthy, low-risk women and their infants during pregnancy,

labor and delivery and in the first few weeks after birth.

The scope of practice is limited to providing essential primary care only. All complications require consultation with, and possible transfer to, a physician for continued care. Midwives are required to arrange for backup medical care for each mother and infant prior to the expected date of delivery.

LMs generally deliver babies in the home, although a fair number deliver in clinics or birthing centers. LMs do not deliver in the hospital, but they are encouraged to accompany all hospital transfers in order to accomplish a smooth transition of care.

There are currently 40 licensed midwives in the state practicing in 8 counties.

The percentage of midwife deliveries in the state has remained constant at 1% of live births over the past 8 to 10 years. In 1986, licensed midwives provided care to approximately 900 women — delivering approximately 600 babies.

The state requires midwives to report on each client accepted for care regardless of who is the final care provider. This allows for careful monitoring of the care provided and the results.

The Arizona Department of Health Services also attempts to monitor the activities of lay midwives, who are generally unregulated practitioners who often take high-risk women as patients. CNMs and LMs do not provide care to high-risk women, but refer them to physicians. Lay midwives are often opposed to traditional medical care and do not follow accepted care standards. This activity is illegal in Arizona.⁶

¹ Interview with Audrey Rath, nursing practitioner consultant, Arizona State Board of Nursing, July 21, 1987.

² Taffel, U.S. Department of Health and Human Services, PHS, National Center for Health Statistics, NO (PHS) 84-1918, *Midwife and Out of Hospital Deliveries, United States*, February, 1984.

³ Department of Health and Human Services, National Center for Health Statistics, unpublished estimates.

⁴ *USA Today*, Number of registered nurse-midwives across the USA as of July, 1986, Friday, August 1, 1986, p. 6A.

⁵ Interview with Donna Tash, president of the Southern Arizona Chapter of the American College of Nurse-Midwives, January, 1987, and with individual nurse-midwives, January-February, 1987.

⁶ Interview with Lisa Hulette, manager of the Maternal Health Section in the Maternal/Child Health Office of the Arizona Department of Health Services, July 23, 1987.



MAP 17

**Certified Nurse
Midwives, 1987**

TOTAL PER COMMUNITY ☐ No.

COMMUNITIES ☐ .

COUNTY SEAT ☐ @

COUNTIES W/ AN SMSA ☒ ■

COUNTIES W/O AN SMSA ☐ □



MAP 18

**Licensed
Midwives, 1987**

TOTAL PER COMMUNITY ☐ No.

COMMUNITIES ☐ .

COUNTY SEAT ☐ @

COUNTIES W/ AN SMSA ☒ ■

COUNTIES W/O AN SMSA ☐ □

Nurses (LPN)

Nurses (LPN) in Arizona

Licensed Practical Nurses provide nursing care to sick, injured and convalescent patients under the general supervision of physicians and RNs. They may also help supervise nursing aides, orderlies and attendants.

Most LPNs work in hospitals while many others work in nursing homes and inpatient health facilities. Others are employed in private homes, doctors' offices, schools and public health agencies.

The role of LPNs will decrease significantly in the coming years because of the need in Arizona, and nationally, for more independent nursing. The Committee on Nursing Manpower and Education, established by the 1986 Arizona Legislature, has recommended the LPN program be phased out during the next 5 years.

There is a major effort being made by employers to assist LPNs in upgrading to the associate degree (ADN) or bachelor of science degree (BSN) in nursing to meet the changes in the increasingly complex health care environment.¹

In 1984, there were 6,550 LPNs in the state, with 1,243 in the rural counties. The state ratio of LPNs per 100,000 population was 216 overall and 162 in the rural counties. There were 7,832 LPNs in the state as of May 27, 1987, with 1,527 in the rural areas. The overall ratio in-

creased to 226 and 186 in the rural counties.²

Arizona's figures are higher than the 1982 national ratio of 173. However, Arizona figures may be inflated because they include all LPNs, even those who are not active in the profession. As of December of 1985, 72% of Arizona's LPNs were employed full time or part time in the nursing field.³

Cochise County showed a major increase in actual number of LPNs moving from 157 to 220 — a 40% increase. Coconino County moved up from 57 to 81 (42%), La Paz from 15 to 23 (53%), Mohave from 166 to 193 (16%), Navajo from 78 to 98 (26%), Pinal from 211 to 275 (30%) and Yavapai from 162 to 210 (30%).

Gila County was the only county to have a decrease, dropping from 81 to 79.

¹ The Arizona Department of Health Services, Committee on Nursing Manpower and Education, *Nursing: Arizona's Plan for the Future*, January, 1987, p. i-vi.

² Compiled from an Arizona State Board of Nursing, computer printout, May, 27, 1987, and *The Arizona Rural Health Provider Atlas*, 1984, p. 32.

³ Interview with Denise Hallfors, executive director of the Arizona Nursing Association, July 17, 1987, quoting the Arizona State Board of Nursing Statistics, Crosstabulation of Employment Statistics, December 15, 1985.

TABLE 21

LICENSED PRACTICAL NURSES (LPN) IN ARIZONA, 1987 BY COUNTY

Counties Without an SMSA	LPNs	1987 Population ¹	Ratio ²
Apache	45	62,400	72
Cochise	220	100,300	219
Coconino	81	91,900	88
Gila	78	40,100	194
Graham	33	24,700	133
Greenlee	9	9,600	94
La Paz	23	14,200	162
Mohave	193	79,300	243
Navajo	98	75,700	129
Pinal	275	107,200	256
Santa Cruz	29	29,200	99
Yavapai	210	95,000	221
Yuma	233	89,500	260
	1,527	819,100	186
Counties With an SMSA			
Maricopa	4,587	1,990,800	230
Pima	1,718	659,100	261
	6,305	2,649,900	238
Arizona Total =	7,832	3,469,000	226

¹ Arizona Department of Economic Security, Population Statistics Unit, Table 1, Arizona Population Projections - Counties and Places 1986-2035, December, 1986.

² LPNs per 100,000 population.

Source: Arizona State Board of Nursing, Computer printout, May 27, 1987.

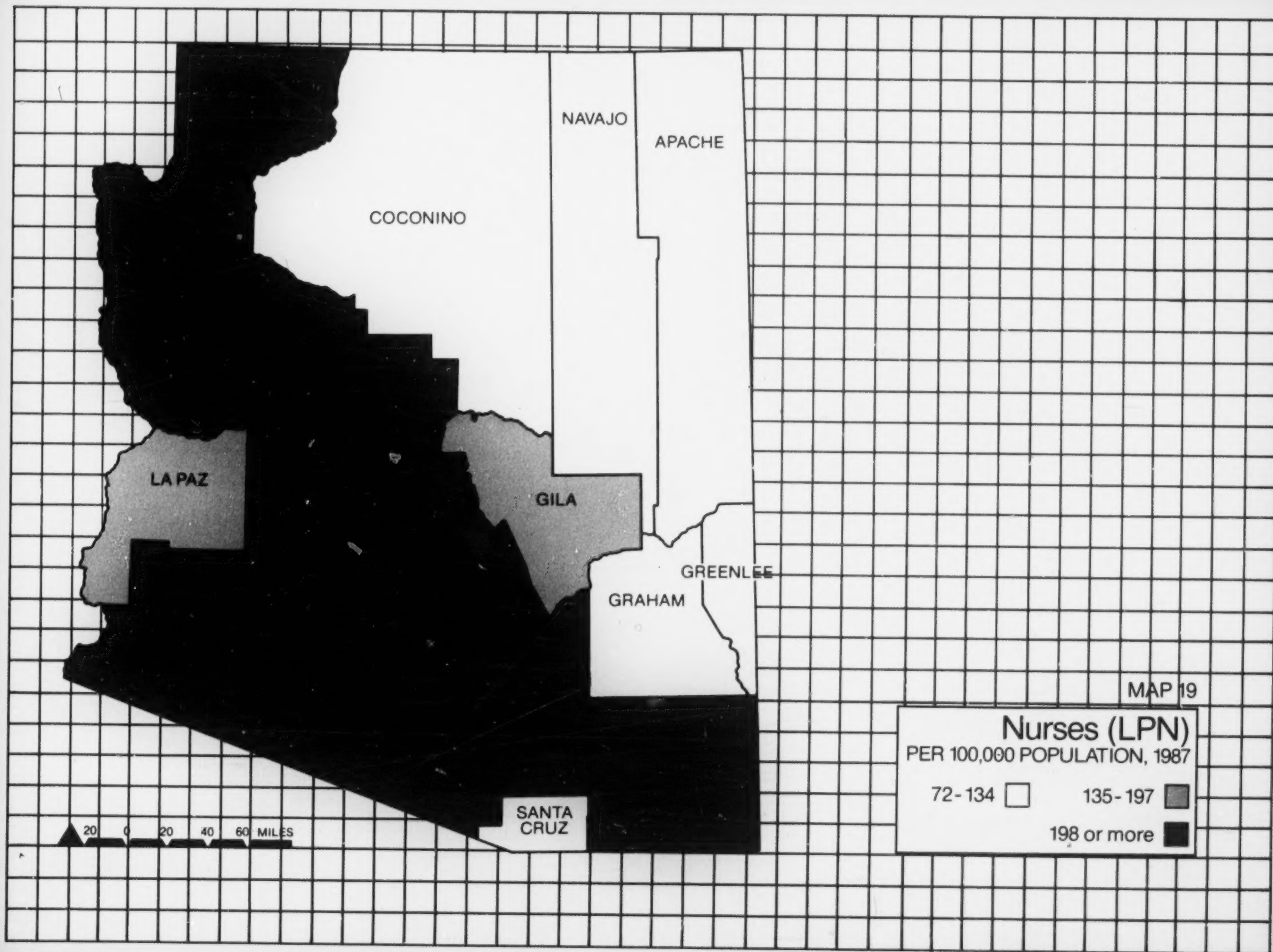


TABLE 22

LICENSED PRACTICAL NURSES (LPN) IN ARIZONA, 1987 BY COMMUNITY

Apache County		Coconino County		La Paz County		Tonopah	
Chambers	1	Cameron	1	Bouse	2	Waddell	2
Chinle	13	Flagstaff	27	Parker	16	Wickenburg	14
Dennehotso	1	Grand Canyon	1	Quartzsite	5	Wittmann	4
Eagar	3	Leupp	1	Total	23	Youngtown	8
Ft. Defiance	6	Page	7			Total	4,587
Ganado	5	Parks	1	Maricopa County		Mohave County	
Houck	1	Sedona	24	Ahwatukee	1	Bullhead City	17
Many Farms	1	Tuba City	17	Avondale	8	Colorado City	1
Petrified Forest	1	W. Sedona	1	Buckeye	10	Dolan Springs	1
Springerville	6	Williams	1	Carefree	2	Ft. Mohave	7
St. Johns	3	Total	81	Cashion	2	Kingman	84
St. Michael	1	Gila County		Cave Creek	10	Lake Havasu City	55
Teec Nos Pos	1	Claypool	8	Chandler	184	Meadview	2
Tsaile	1	Globe	34	Chandler Heights	2	Mohave Valley	6
Window Rock	1	Miami	2	El Mirage	3	Riviera	17
Total	45	Payson	16	Fountain Hills	10	Topock	2
Cochise County		Peridot	1	Gila Bend	3	Yucca	1
Benson	12	Pine	3	Gilbert	46	Total	193
Bisbee	26	Rye	1	Glendale	416	Navajo County	
Cochise	1	San Carlos	7	Goodyear	7	Clay Springs	1
Douglas	28	Tonto Basin	2	Guadalupe	2	Forest Lake	1
Dragoon	2	Winkelman	4	Higley	4	Heber	3
Elfrida	3	Total	78	Laveen	25	Holbrook	4
Ft. Huachuca	25	Graham County		Litchfield Park	11	Hotevilla	1
Huachuca City	6	Ft. Thomas	1	Mesa	708	Joseph City	1
Hereford	8	Pima	7	Morristown	2	Kayenta	2
Kansas Settlement	1	Safford	18	Paradise Valley	8	Keams Canyon	6
McNeal	5	Thatcher	7	Peoria	116	Kykotsmovi	1
Pearce	3	Total	33	Phoenix	2,329	Lakeside	13
Pirtleville	1	Greenlee County		Queen Creek	2	Overgaard	1
Sierra Vista	83	Clifton	2	Scottsdale	300	Pinetop	6
St. David	4	Duncan	4	Sun City	55	Pinon	1
Tombstone	4	Morenci	3	Sun City West	7	Polacca	5
Willcox	8	Total	9	Sun Lakes	11	Second Mesa	1
Total	220			Surprise	2	Show Low	19
				Tempe	262	Snowflake	7
				Tolleson	9	Sun Valley	1

Taylor	1
White Mountain Lake	1
Whiteriver	5
Winslow	17
Total	98

Pima County

Ajo	2
Arivaca	1
Cortaro	1
Green Valley	12
Marana	25
Rillito	1
Redington	1
Sahuarita	6
Sells	9
Topawa	1
Tucson	1,657
Vail	2
Total	1,718

Pinal County

Apache Junction	64
Arizona City	1
Bapchule	3
Casa Grande	78
Coolidge	18
Eloy	8
Florence	33
Kearny	5
Mammoth	2
Maricopa	9
Oracle	10
Picacho	1
Sacaton	19
San Manuel	10
Stanfield	1
Superior	12
Valley Farms	1
Total	275

Santa Cruz County

Amado	1
Elgin	1
Nogales	13
Patagonia	6
Rio Rico	7
Tumacacori	1
Total	29

Yavapai County

Bagdad	2
Black Canyon City	4
Camp Verde	7
Chino Valley	13
Clarkdale	3
Cornville	3
Cottonwood	21
Dewey	6
Humboldt	3
Kirkland	2
Lake Montezuma	2
Paulden	1
Prescott	112
Prescott Valley	30
Seligman	1
Total	210

Yuma County

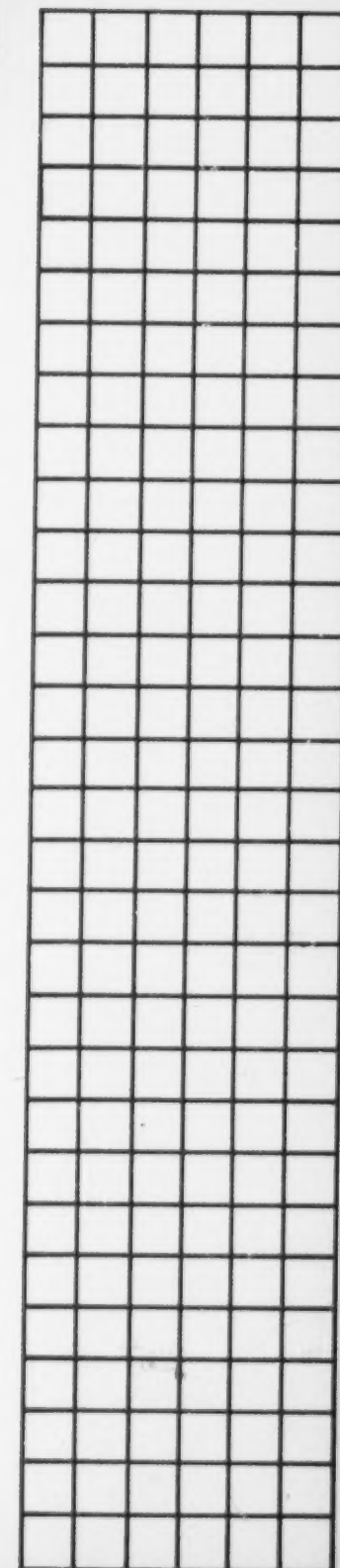
Gadsden	1
Somerton	5
Yuma	227
Total	233

**Total Counties
Without an SMSA** 1,527

Counties With an SMSA
Maricopa 4,587
Pima 1,718
6,305

Arizona Total = 7,832

Source: Arizona State Board of Nursing,
Computer printout, May 27, 1987.



Nurse Practitioners (NP) in Arizona

Nurse practitioners are registered nurses who have completed additional training in specialty areas and assume many routine tasks of a physician.

The Arizona State Board of Nursing began certifying NPs in 1973. Prescriptive authority for nurse practitioners went into effect in Arizona on July 1, 1984. As of June 30, 1987, 201 NPs were legally sanctioned to prescribe or dispense drugs.¹

NPs are certified by the Nursing Board in 1 or more of the following specialty areas: nurse-midwife*; pediatric associate; family; adult; obstetrical-gynecological; neonatal; and school.

In the past, most nurse practitioners worked in hospitals, but this is no longer the case. Now, most NPs work in outpatient clinics, health maintenance organizations (HMOs), private industry or in private practice with a physician and in hospitals.

In some rural areas or inner-city ghettos, NPs are the only provider of primary care services. NPs were defined, as a group, in the 1970s as a way of offering more balanced primary health care, better access for the disadvantaged, containment of health service costs and a better use of health manpower.

In 1984, there were 351 NPs in Arizona with 68 in the rural counties. The state ratio per

100,000 population was 12 overall and 9 in the rural counties.

There were 488 NPs in Arizona as of May 27, 1987, with 96 of them in the rural counties. The overall state ratio of NPs in Arizona moved up to 14 and up one-third in the rural counties to 12.²

The ratio in Arizona is almost double the 1984 national ratio of 7.25,³ indicating two things.

First, nurse practitioners are filling a gap in counties where there are shortages of doctors. Second, Arizona figures may be inflated because they include all NPs, even those who are not active in the profession.

While the numbers are up in the rural counties, Yuma County lost 1 NP (from 6 to 5) and Greenlee and La Paz Counties continued to be without NPs.

Note * See separately under Midwife (CNM) section.

¹ Interview with Audrey Rath, nursing practitioner consultant, the Arizona State Board of Nursing, July 20, 1987.

² Compiled from an Arizona State Board of Nursing, computer printout, May 27, 1987, and *The Arizona Rural Health Provider Atlas*, 1984, p. 28.

³ U.S. Department of Commerce, Bureau of Census, *1987 Statistical Abstract of the United States*, 107th Edition.

TABLE 23

CERTIFIED NURSE PRACTITIONERS (NP) IN ARIZONA, 1987 BY COUNTY

Counties Without an SMSA	Nurse Practitioners ¹	1987 Population ²	Ratio
Apache	12	62,400	19
Cochise	12	100,300	12
Coconino	24	91,900	26
Gila	4	40,100	10
Graham	4	24,700	16
Greenlee	0	9,600	0
La Paz	0	14,200	0
Mohave	5	79,300	6
Navajo	11	75,700	14
Pinal	5	107,200	5
Santa Cruz	3	29,200	10
Yavapai	11	95,000	12
Yuma	5	89,500	6
	96	819,100	12
Counties With an SMSA			
Maricopa	249	1,990,800	13
Pima	143	659,100	22
	392	2,649,900	15
Arizona Total =	488	3,469,000	14

¹ Nurse practitioners are registered nurses who have completed additional training in one of the following specialty areas: family; midwife; adult; obstetrical-gynecological; school nurse; pediatric; and neonatal. Those listed may not be actively employed as nurse practitioners.

² Arizona Department of Economic Security, Population Statistics Unit, Table 1, Arizona Population Projections - Counties and Places 1986-2035, December, 1986.

Source: Arizona State Board of Nursing, Computer printout, May 27, 1987.

Nurses (NP)

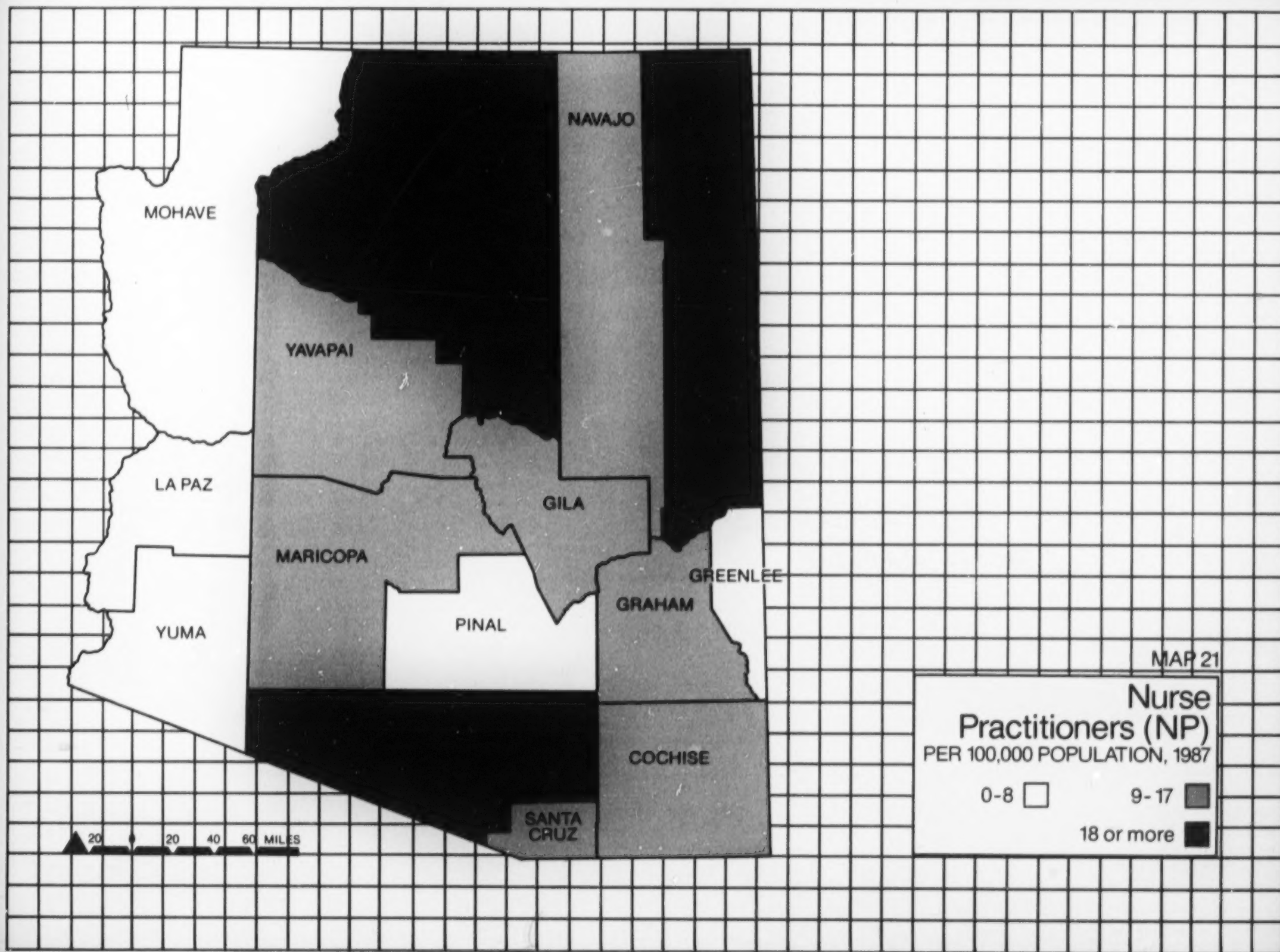


TABLE 24

CERTIFIED NURSE PRACTITIONERS BY SPECIALTY AREAS

Counties

Without an SMSA	Family	Midwife	Adult	OB-GYN	School	Pediatric	Neonatal	Total¹
Apache	2	6	1	2	0	2	0	13
Cochise	6	0	1	1	0	3	1	12
Coconino	5	4	3	4	1	5	2	24
Gila	3	0	1	0	0	0	0	4
Graham	3	0	1	0	0	0	0	4
Greenlee	0	0	0	0	0	0	0	0
La Paz	0	0	0	0	0	0	0	0
Mohave	3	0	1	0	0	1	0	5
Navajo	4	1	1	2	1	1	0	10
Pinal	3	0	2	0	0	0	0	5
Santa Cruz	3	0	0	0	0	0	0	3
Yavapai	4	2	2	0	1	2	0	11
Yuma	1	0	0	1	2	1	0	5
	<u>37</u>	<u>13</u>	<u>13</u>	<u>10</u>	<u>5</u>	<u>15</u>	<u>3</u>	<u>96</u>

Counties

With an SMSA

Maricopa	67	30	38	31	4	43	36	249
Pima	49	19	22	27	3	13	10	143
	<u>116</u>	<u>49</u>	<u>60</u>	<u>58</u>	<u>7</u>	<u>56</u>	<u>46</u>	<u>392</u>
Arizona Total =	153	62*	73	68	12	71	49	488 ²

* See also section on Midwives (CNM)

¹ Nurse practitioners are registered nurses who have completed additional training in 1 or more of the following specialty areas: family; midwife; adult; obstetrical-gynecological; school nurse; pediatric; and neonatal.

² There are 15 NPs that have certification in 2 specialty areas. This data does not necessarily mean that NPs are actively employed as NPs.

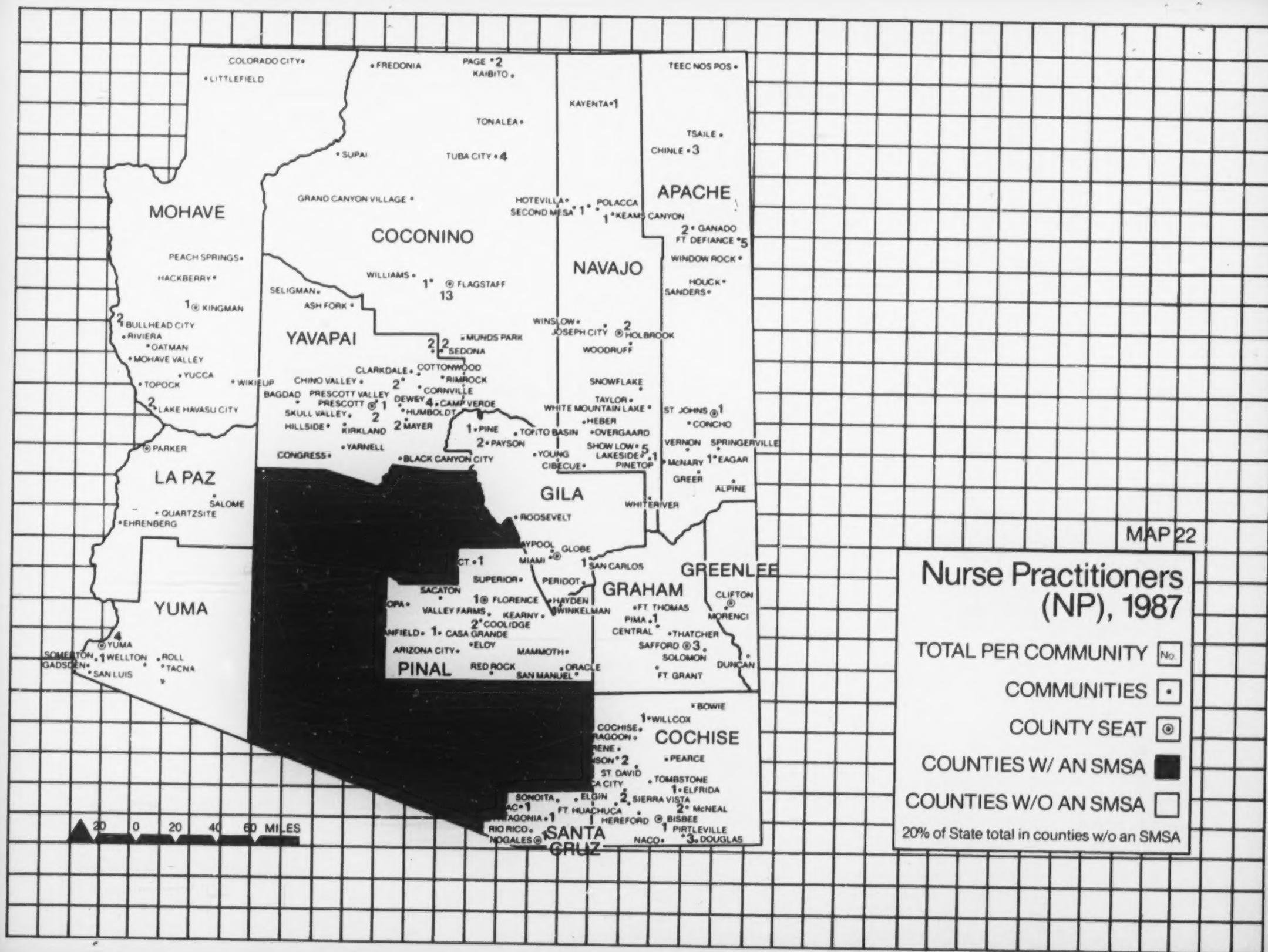
Source: Arizona State Board of Nursing, computer printout, May 27, 1987.

TABLE 25

CERTIFIED NURSE PRACTITIONERS (NP) IN ARIZONA, 1987 BY COMMUNITY

Apache County		Greenlee County		Navajo County		Yuma County	
Chinle	3	Total	0	Holbrook	2	Somerton	1
Eagar	1			Kayenta	1	Yuma	4
Ft. Defiance	5	La Paz County		Keams Canyon	1	Total	5
Ganado	2	Total	0	Kykotsmovi	1		
St. Johns	1			Lakeside	5		
Total	12	Maricopa County		Pinetop	1	Total Counties	
		Buckeye	1	Total	11	Without an SMSA	96
Cochise County		Cave Creek	1			Counties With an SMSA	
Benson	2	Chandler	10	Pima County		Maricopa	249
Bisbee	1	Fountain Hills	2	Marana	1	Pima	143
Douglas	3	Gilbert	7	Sells	3		392
Elfrida	1	Glendale	13	Tucson	139		
McNeal	2	Litchfield Park	1	Total	143		
Sierra Vista	2	Mesa	28			Arizona Total =	488
Willcox	1	Morristown	1	Pinal County			
Total	12	Paradise Valley	2	Apache Junction	1		
		Peoria	8	Casa Grande	1		
Coconino County		Phoenix	109	Coolidge	2		
Flagstaff	13	Scottsdale	30	Florence	1		
Page	2	Sun City	1	Total	5		
Parks	1	Sun Lakes	1			Santa Cruz County	
Sedona	2	Tempe	32	Nogales	1		
Tuba City	4	Wickenburg	1	Patagonia	1		
W. Sedona	2	Youngtown	1	Tubac	1		
Total	24	Total	249	Total	3		
		Mohave County		Yavapai County			
Gila County		Bullhead City	2	Camp Verde	4		
Payson	2	Kingman	1	Jerome	2		
Pine	1	Lake Havasu City	2	Mayer	2		
San Carlos	1	Total	5	Prescott	2		
Total	4			Prescott Valley	1		
				Total	11		
Graham County							
Pima	1						
Safford	3						
Total	4						

Source: Arizona State Board of Nursing,
Computer printout, May 27, 1987.



Nurses (RN)

Nurses (RN) in Arizona

Registered Nurses are responsible for the type and quality of all nursing care that patients receive and they are the major link between patients and physicians. They observe and record symptoms, observe the progress of patient recovery and instruct patients and family members.

RNs are also responsible for carrying out instructions of the physicians and for supervising licensed practical nurses and other health personnel. Some RNs provide care in hospitals and nursing homes, while others work as office, school, industrial, private duty or community health nurses.

RNs also provide expertise in several specialty areas as nurse consultants. One of the emerging areas is the nurse consultant to the legal profession. In Arizona, about 50 RNs are in this field. They use their medical knowledge to assist attorneys in deciding about taking cases, determining legal strategies and preparing for trial.¹

There were 21,896 registered nurses with the Arizona State Board of Nursing in 1984, with 3,200 of them in the rural counties. The overall state ratio of RNs per 100,000 population was 723 and 433 in the rural areas. As of May of 1987, there were 26,431 RNs in Arizona and 3,906 in the rural counties. The overall state ratio was 762 and 477 in the rural counties.²

Arizona figures far exceed the 1984 national ratio of 629.³ However, Arizona figures may be inflated because they include all RNs, even those who are not active in the profession.

Research showed that 81% of Arizona's RNs in 1985 were employed full or part time in the nursing field. These figures help to bring Arizona's ratio more in line with national figures.⁴

A report from the Committee on Nursing Manpower and Education, created by the 1986 Arizona Legislature, estimates a current shortage of 3,723 nurses in the state. According to the report, the shortage of RNs (with 2 to 4 years of education) is acute. A glance at the newspaper want ads would seem to confirm this.⁵

The Arizona committee on nursing also concluded "Arizona is barely able to keep pace with the demand for nurses and clearly will face a shortage in the years to come." Recruiting new, adequately prepared nurses to work in understaffed areas, as well as retaining nurses who currently work in these areas, will be absolutely essential, the committee said.

A survey by *Nursing* magazine found that 56% of the nurses they surveyed were not as happy with their careers as they were 5 years ago. About 75% attributed dissatisfaction to paper work and 66% said salaries were too low. The average nurse gets paid \$20,340 a year

TABLE 26

REGISTERED NURSES (RN) IN ARIZONA, 1987 BY COUNTY

Counties Without an SMSA	Registered Nurses ¹	1987 Population ²	Ratio ³
Apache	158	62,400	253
Cochise	476	100,300	475
Coconino	556	91,900	605
Gila	228	40,100	569
Graham	94	24,700	381
Greenlee	24	9,600	250
La Paz	33	14,200	232
Mohave	374	79,300	472
Navajo	250	75,700	330
Pinal	458	107,200	427
Santa Cruz	69	29,200	236
Yavapai	726	95,000	764
Yuma	460	89,500	514
	3,906	819,100	477
Counties With an SMSA			
Maricopa	16,724	1,990,800	840
Pima	5,801	659,100	880
	22,525	2,649,900	850
Arizona Total =	26,431	3,469,000	762

¹ Total number excludes Nurse Practitioners. Although they are registered nurses, they have completed a post R.N. training program in a specific specialty area and provide extensive primary care services. See separate section in Atlas.

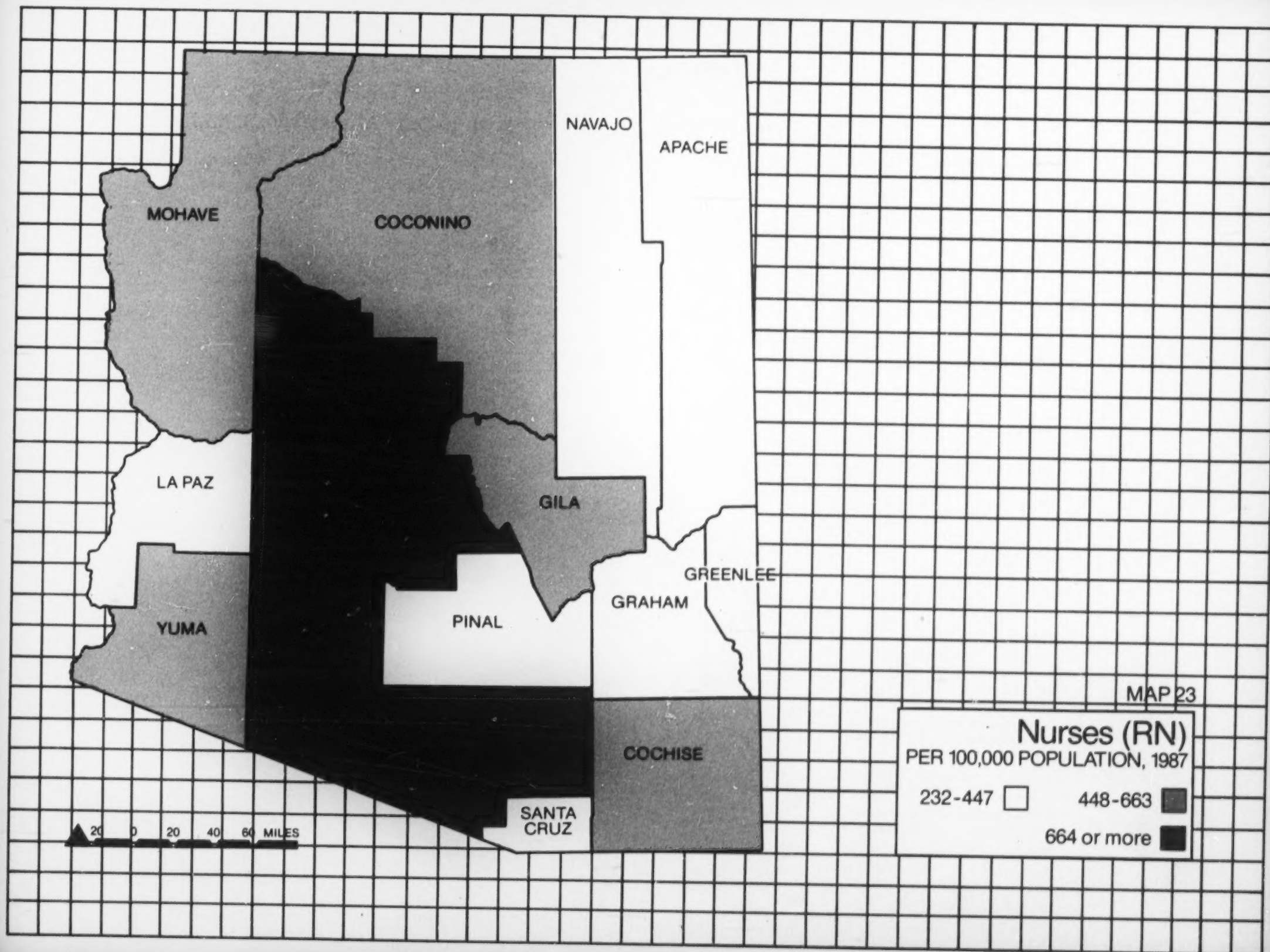
² Arizona Department of Economic Security Population Statistics Unit, Table 1, Arizona Population Projections - Counties and Places 1986-2035, December, 1986.

³ RNs per 100,000 population.

Source: Arizona State Board of Nursing, Computer printout, May 27, 1987.

for making what sometimes amount to life-or-death decisions.⁶

Despite the projected shortages, every rural county in Arizona showed an increase of



MAP 23

Nurses (RN)
PER 100,000 POPULATION, 1987

232-447	□	448-663	■
		664 or more	■

at least 10% in the actual number of RNs from 1984 to 1987, except Greenlee County which showed a deficit of 25% — dropping from 32 to 24. Yuma County showed an increase of 39%, up from 331 to 460. Apache County moved up from 115 to 158 (37%), La Paz County from 23 to 33 (43%), Mohave County from 291 to 374 (28%), Pinal County from 348 to 458 (32%), Santa Cruz County from 54 to 69 (28%) and Yavapai County from 586 to 726 (24%).

¹ Joe Cole, New kind of RNs: Nurse-consultants advise Valley law firms, *The Arizona Republic*, April 5, 1987.

² Compiled from an Arizona State Board of Nursing, computer printout, May 27, 1987, and *The Arizona Rural Health Provider Atlas*, 1984, p. 36.

³ U.S. Department of Commerce, Bureau of Census, 1987 *Statistical Abstract of the United States*, 107th Edition.

⁴ Interview with Denise Hallfors, executive director of the Arizona Nursing Association, July 17, 1987, quoting the Arizona State Board of Nursing Statistics Crosstabulation of Employment Status, December 15, 1985.

⁵ Arizona Department of Health Services, Committee on Nursing Manpower and Education, *Nursing: Arizona's Plan for the Future*, January, 1987, p. iii.

⁶ Tigner, Hospitals Charting Acute Nursing Shortage, *Greater Phoenix Business Journal*, June 1, 1987.

TABLE 27

REGISTERED NURSES (RN) IN ARIZONA, 1987 BY COMMUNITY

Apache County		Tombstone		Graham County	
Alpine	5	Willcox	28	Central	3
Chinle	33	Total	476	Ft. Grant	1
Concho	4			Ft. Thomas	3
Eagar	13	Coconino County		Pima	9
Ft. Defiance	16	Bellefont	1	Safford	59
Ganado	28	Flagstaff	355	San Jose	2
Greer	1	Forest Lakes	3	Solomon	1
Lupton	1	Grand Canyon	5	Thatcher	16
Many Farms	2	Happy Jack	3	Total	94
McNary	1	Kaibito	1		
Red Valley	1	Mormon Lake	3	Greenlee County	
Sanders	3	Mountaineer	1	Clifton	8
Springerville	19	Munds Park	4	Duncan	6
St. Johns	9	Page	34	Morenci	10
Teec Nos Pos	2	Sedona	83	Total	24
Vernon	1	Tuba City	46		
Window Rock	19	W. Sedona	2	La Paz County	
Total	158	Williams	15	Ehrenberg	1
		Total	556	Parker	28
Cochise County		Gila County		Quartzsite	3
Benson	34	Claypool	19	Wenden	1
Bisbee	59	Globe	78	Total	33
Bowie	1	Hayden	5		
Cochise	7	Miami	13	Maricopa County	
Douglas	65	Payson	79	Ahwatukee	5
Dragoon	1	Pine	12	Arlington	3
Elfrida	4	Roosevelt	1	Avondale	19
Ft. Huachuca	43	San Carlos	15	Buckeye	17
Hereford	21	Tonto Basin	1	Carefree	20
Huachuca City	6	Winkelman	2	Cave Creek	36
McNeal	8	Young	3	Chandler	786
Pearce	5	Total	228	El Mirage	4
Pomerene	2			Fountain Hills	113
Portal	1			Gila Bend	3
San Simon	1			Gilbert	159
Sierra Vista	173			Glendale	1,543
St. David	14			Goodyear	8
				Guadalupe	1

Higley	16
Laveen	24
Litchfield Park	56
Mesa	2,238
Morristown	4
New River	1
Paradise Valley	109
Peoria	353
Phoenix	7,285
Queen Creek	15
Scottsdale	2,072
Sun City	216
Sun City West	74
Sun Lakes	42
Surprise	6
Tempe	1,401
Tolleson	17
Waddell	16
Wickenburg	39
Wittmann	4
Youngtown	19
Total	16,724

Mohave County

Bullhead City	37
Colorado City	2
Ft. Mohave	5
Kingman	132
Lake Havasu City	143
Littlefield	1
Meadview	1
Mohave Valley	6
Oatman	1
Peach Springs	2
Riviera	41
Wickiup	2
Yucca	1
Total	374

Navajo County

Heber	3
Holbrook	13
Hotevilla	1
Joseph City	5
Kayenta	15
Keams Canyon	8
Kykotsmovi	1
Lakeside	40
Overgaard	5
Pinetop	24
Second Mesa	1
Shonto	4
Show Low	36
Snowflake	13
Taylor	8
White Mountain Lake	2
Whiteriver	24
Winslow	47
Total	250

Pima County

Ajo	8
Arivaca	2
Catalina	2
Cortaro	2
Green Valley	74
Lukeville	1
Marana	19
Mt. Lemon	2
Oro Valley	7
Rillito	2
Sahuarita	8
Topawa	1
Tucson	5,667
Vail	4
Why	2
Total	5,801

Pinal County

Apache Junction	110
Arizona City	14
Casa Grande	146
Coolidge	32
Eloy	6
Florence	48
Kearny	20
Mammoth	2
Maricopa	6
Oracle	24
Sacaton	10
San Manuel	21
Stanfield	2
Superior	14
Toltec	1
Valley Farms	2
Total	458

Santa Cruz County

Amado	9
Elgin	3
Nogales	29
Patagonia	6
Rio Rico	11
Sonoita	4
Tubac	3
Tumacacori	4
Total	69

Yavapai County

Ash Fork	2
Bagdad	6
Black Canyon City	5
Camp Verde	29
Chino Valley	45
Clarkdale	13
Congress	1
Cornville	17
Cottonwood	102

Dewey	18
Humboldt	1
Jerome	2
Kirkland	1
Lake Montezuma	7
Mayer	9
Paulden	2
Prescott	407
Prescott Valley	48
Rimrock	5
Seligman	2
Whipple	1
Yarnell	3
Total	726

Yuma County

Gadsden	1
Martinez Lake	1
Roll	1
Somerton	9
Wellton	2
Yuma	446
Total	460

Total Counties

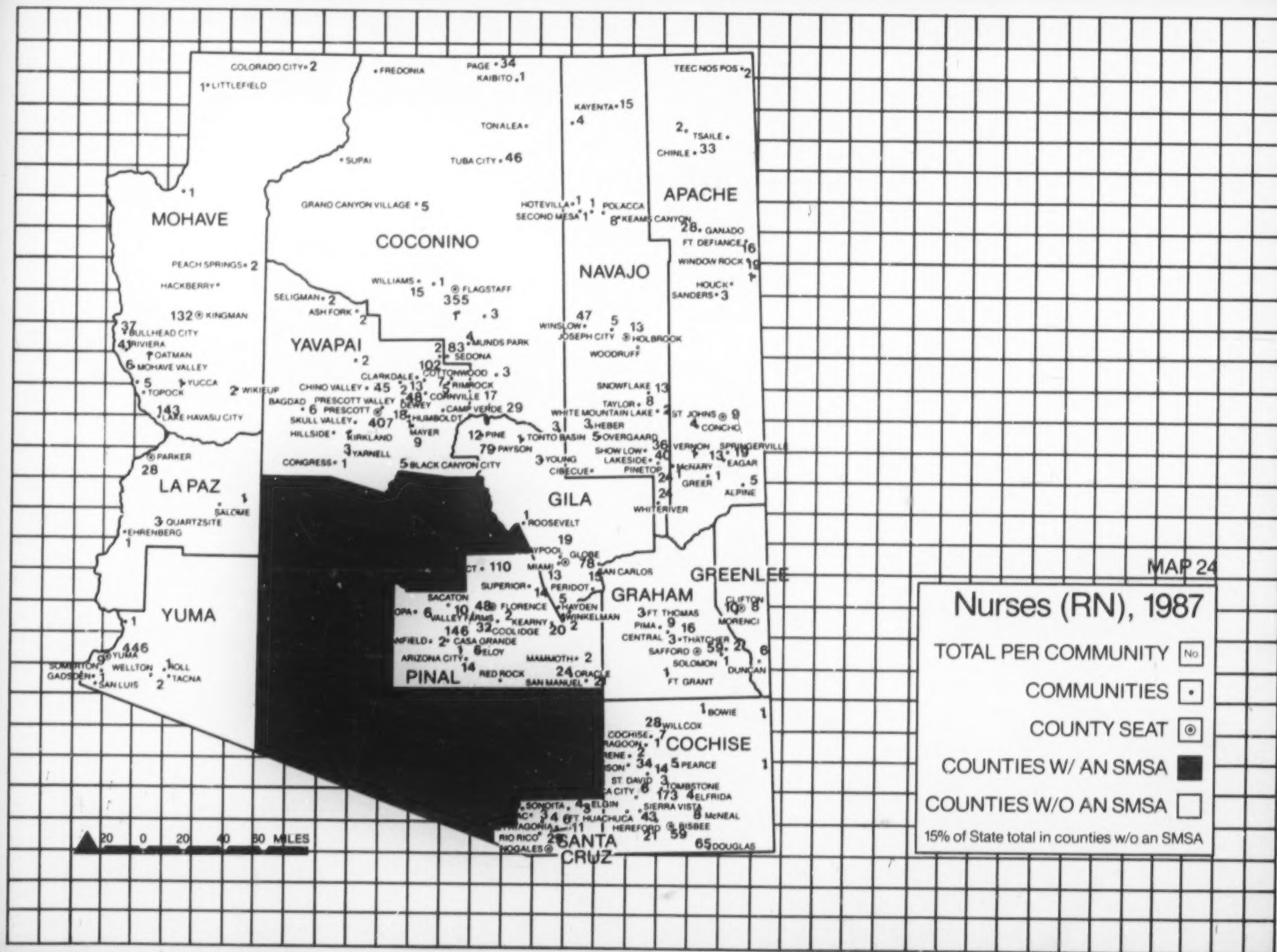
Without an SMSA 3,906

Counties With an SMSA

Maricopa	16,724
Pima	5,801
Total	22,525

Arizona Total = 26,431

Source: Arizona State Board of Nursing,
Computer printout, May 27, 1987.



Optometrists in Arizona

Optometrists examine the eyes to determine the presence of any abnormality and they prescribe and adapt lenses, or other optical aids, to preserve or restore maximum efficiency of vision.

Optometrists should not be confused with ophthalmologists (who are medical doctors) or with opticians (who fit and adjust eye glasses according to prescriptions written by ophthalmologists or optometrists).

The number of optometrists licensed through the Arizona State Board of Optometry increased slightly from 321 in 1984 to 330 in 1987. However, the ratio of optometrists per 100,000 population dropped from 11 in 1984 to 9 in 1987. The same pattern was true in the rural counties, with the ratio dropping from 10 to 8. In addition, the actual number of optometrists in the rural counties dropped from 69 to 64.¹

In 1987, Arizona was below the 1983 national ratio of 11 optometrists per 100,000 population.² Coconino, Graham and Mohave Counties had ratios that reached the national level even though each lost individual providers.

Graham County showed a decrease in actual number of providers from 5 optometrists to 3, Coconino County dropped from 12 to 10, Mohave County dropped from 10 to 9 and Pinal County dropped from 9 to 6. La Paz County continued to be without an optometrist. There were variations in almost every other rural county, but the increase or decrease was no more than 1 or 2.

¹ Information compiled from an Arizona State Board of Optometry, computer printout, June 24, 1987, and *The Arizona Rural Health Provider Atlas*, 1984, p. 40.

² *The Arizona Rural Health Provider Atlas*, p. 40.

TABLE 28

LICENSED OPTOMETRISTS IN ARIZONA, 1987 BY COUNTY

<i>Counties Without an SMSA</i>	<i>Optometrists</i>	<i>1987 Population¹</i>	<i>Ratio²</i>
Apache	2	62,400	3
Cochise	9	100,300	9
Coconino	10	91,900	11
Gila	2	40,100	5
Graham	3	24,700	12
Greenlee	1	9,600	10
La Paz	0	14,200	0
Mohave	9	79,300	11
Navajo	5	75,700	7
Pinal	6	107,200	6
Santa Cruz	1	29,200	3
Yavapai	9	95,000	9
Yuma	7	89,500	8
	64	819,100	8
<i>Counties With an SMSA</i>			
Maricopa	200	1,990,800	10
Pima	66	659,100	10
	266	2,649,900	10
Arizona Total =	330	3,469,000	9

¹ Arizona Department of Economic Security, Population Statistics Unit, Table 1, Arizona Population Projections - Counties and Places 1986-2035, December, 1986.

² Optometrists per 100,000 population.

Source: Arizona State Board of Optometry, computer printout, June 24, 1987.

Optometrists

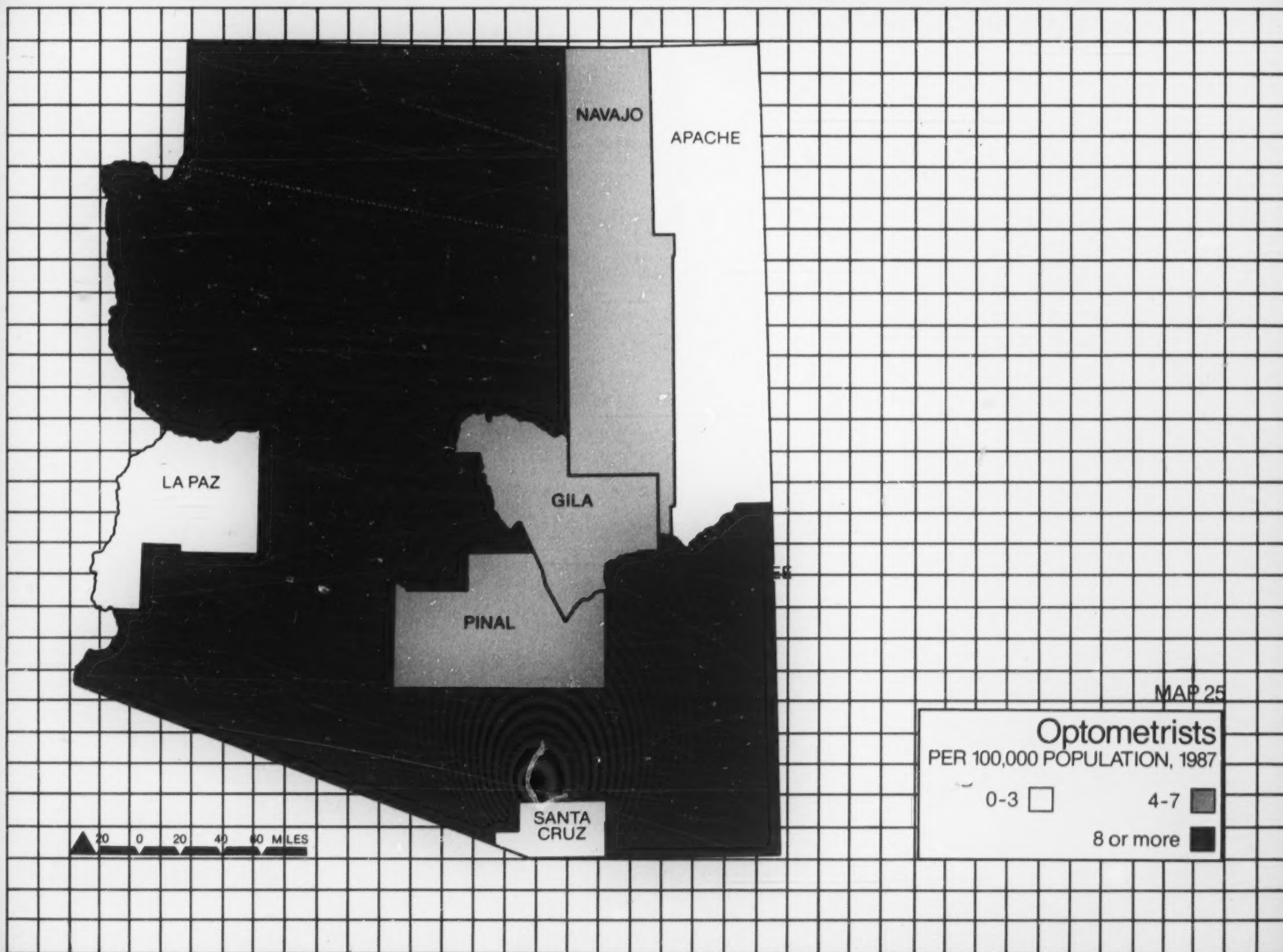
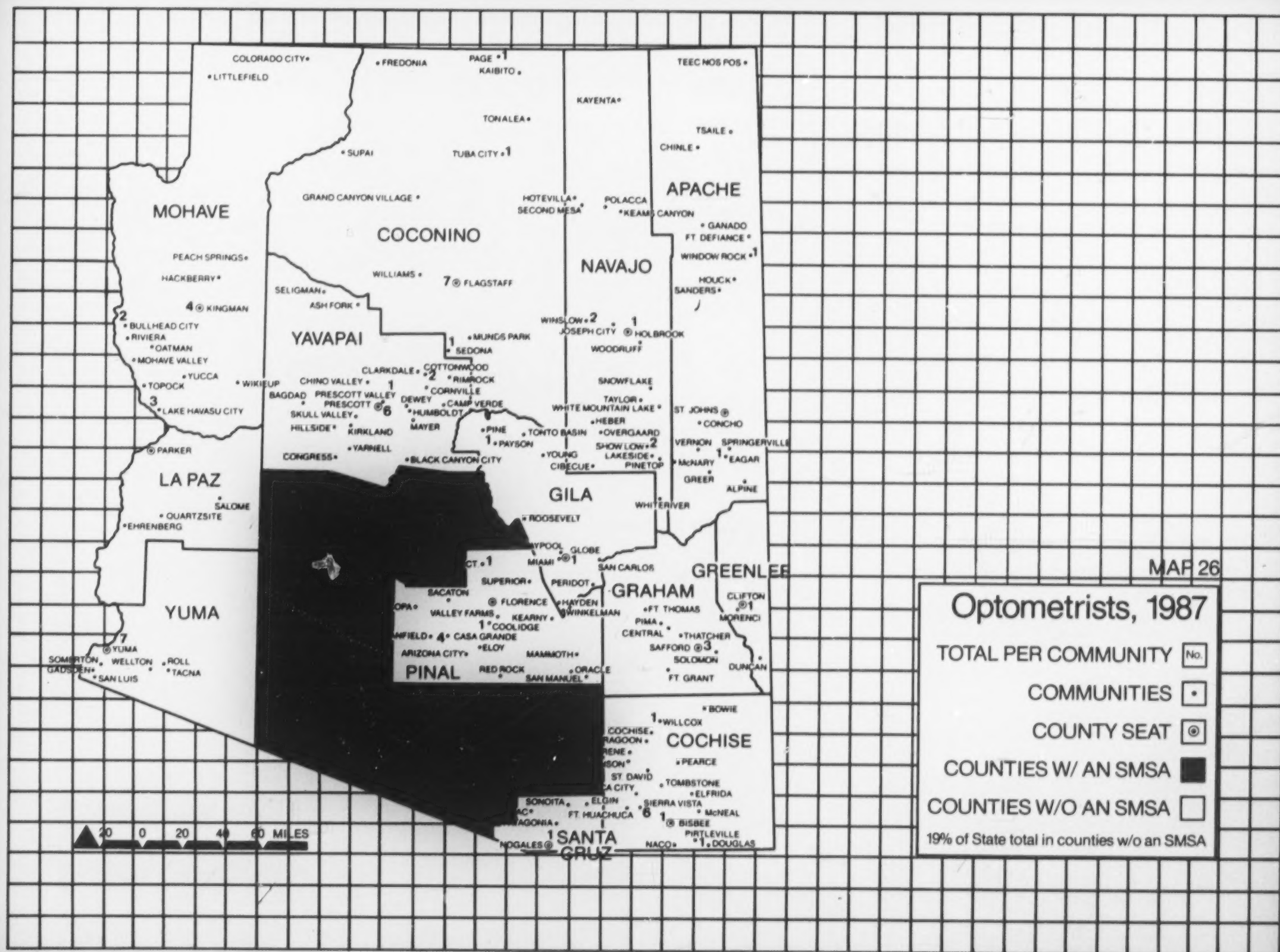


TABLE 29

LICENSED OPTOMETRISTS IN ARIZONA, 1987 BY COMMUNITY

Apache County		Greenlee County		Navajo County		Total Counties Without an SMSA	
Eagar	1	Clifton	1	Holbrook	1		64
Window Rock	1	Total	1	Show Low	2	Counties With an SMSA	
Total	2			Winslow	2		
Cochise County		La Paz County		Total	5	Maricopa	200
Bisbee	1	Total	0			Pima	66
Douglas	1	Maricopa County		Pima County			266
Sierra Vista	6	Chandler	19	Green Valley	1	Arizona Total =	330
Willcox	1	Fountain Hills	2	Tucson	65		
Total	9	Gilbert	2	Total	66		
Coconino County		Glendale	19	Pinal County			
Flagstaff	7	Goodyear	1	Apache Junction	1		
Page	1	Mesa	26	Casa Grande	4		
Sedona	1	Paradise Valley	1	Coolidge	1		
Tuba City	1	Peoria	2	Total	6		
Total	10	Phoenix	81	Santa Cruz County			
Gila County		Scottsdale	22	Nogales	1		
Globe	1	Sun City	3	Total	1		
Payson	1	Sun City West	1	Yavapai County			
Total	2	Sun Lakes	3	Cottonwood	2		
Graham County		Tempe	17	Prescott	6		
Safford	3	Wickenburg	1	Prescott Valley	1		
Total	3	Total	200	Total	9		
		Mohave County		Yuma County			
		Bullhead City	2	Yuma	7		
		Kingman	4	Total	7		
		Lake Havasu City	3				
		Total	9				

Source: Arizona State Board of Optometry, Computer printout, June 24, 1987.



Pharmacists in Arizona

Pharmacists work in a number of settings including community pharmacies, hospitals and clinics.

They are trained to understand the physical and chemical properties of drug products, their pharmacology and therapeutic actions, and clinical uses. Pharmacists also need to know how the drugs will affect a patient and the course of the disease, and how drugs react with each other when taken at the same time.

In 1984, there were 2,052 pharmacists registered by the Arizona State Board of Pharmacy, with 362 in the rural areas. The ratio of pharmacists in Arizona was 72 per 100,000 population and 51 in the rural counties. In July of 1987, there were 2,447 pharmacists in Arizona — 386 of them in the rural counties. The ratio of pharmacists was 70 overall and 47 in the rural counties.¹

Arizona's 1987 ratio surpasses the 1982 national ratio of 68.²

The number of pharmacists in the rural areas increased by 24, but the ratio dropped 4 points (from 51 to 47). Yavapai County was the only rural county to top the state ratio —

checking in at 73 with 69 pharmacists. Yavapai had 58 pharmacists in 1984 and a ratio of 81. The location of a large Veteran's Administration (VA) hospital, a pioneer home and a large number of elderly residents in Yavapai County could explain this pattern.

The actual number of providers in the rural counties showed some shifts from 1984. Besides Yavapai County's increase, Cochise County showed an increase from 38 to 45 (18%), Coconino County jumped from 43 to 49 (14%), Mohave County increased from 37 to 46 (24%), Santa Cruz County was up from 6 to 11 (83%) and Yuma County was up from 44 to 48 (9%).

Gila County made a downward turn, dropping from 25 to 19 (down 24%), Greenlee County fell from 8 to 4 (50%), Pinal County was down from 47 to 43 (9%) and Graham County was down from 13 to 11 (15%).

¹ Compiled from an Arizona State Board of Pharmacy computer printout, July, 1987, and *The Arizona Rural Health Provider Atlas*, 1984, p. 44.

² U.S. Department of Health and Human Services, *Health, United States 1985*.

TABLE 30

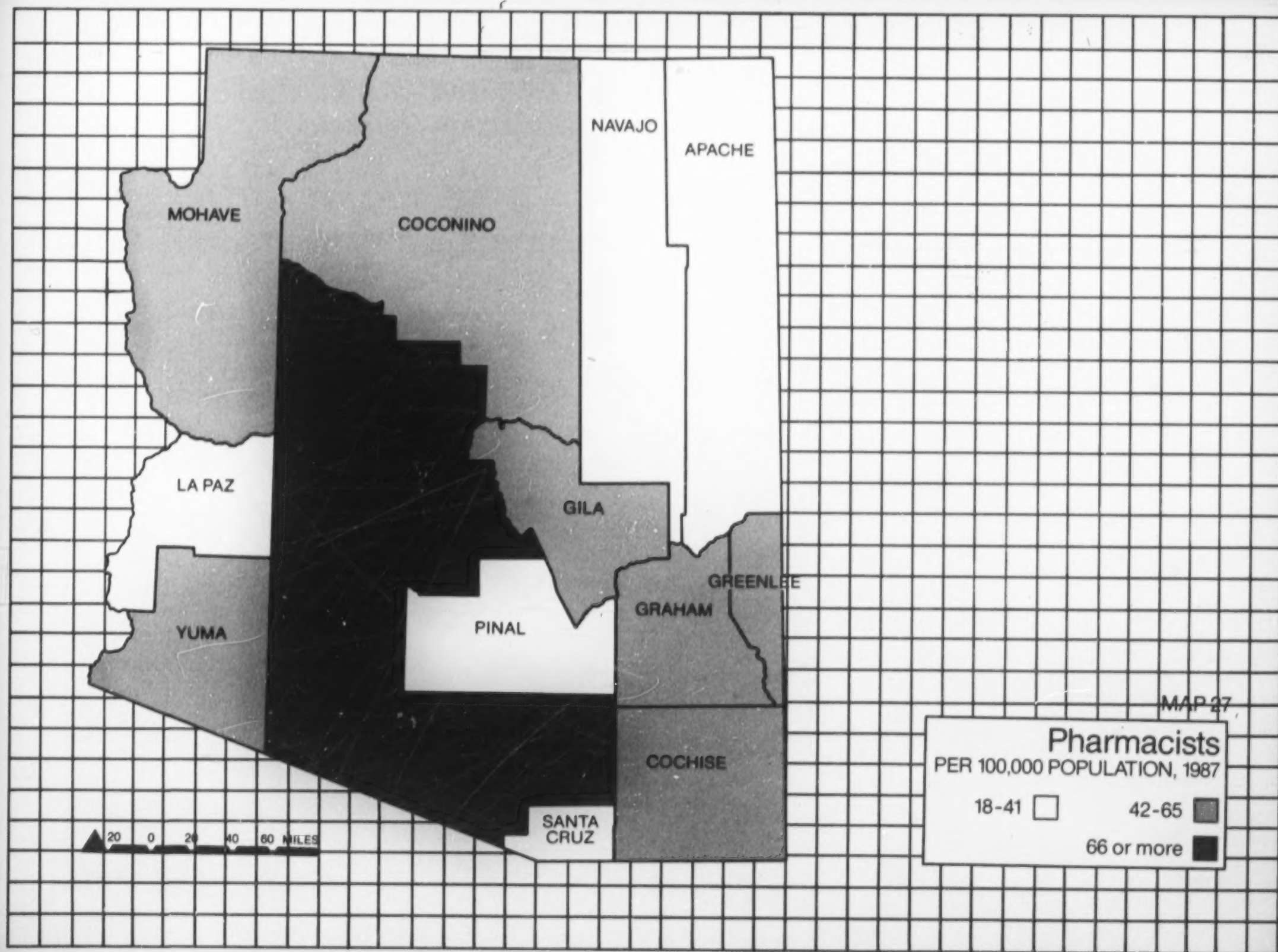
REGISTERED PHARMACISTS IN ARIZONA, 1987 BY COUNTY

Counties Without an SMSA	Pharmacists	1987 Population ¹	Ratio ²
Apache	11	62,400	18
Cochise	45	100,300	45
Coconino	49	91,900	53
Gila	19	40,100	47
Graham	11	24,700	44
Greenlee	4	9,600	42
La Paz	4	14,200	28
Mohave	46	79,300	58
Navajo	26	75,700	34
Pinal	43	107,200	40
Santa Cruz	11	29,200	38
Yavapai	69	95,000	73
Yuma	48	89,500	54
	386	819,100	47
Counties With an SMSA			
Maricopa	1,466	1,990,800	74
Pima	595	659,100	90
	2,061	2,649,900	78
Arizona Total =	2,447	3,469,000	70

¹ Arizona Department of Economic Security, Population Statistics Unit, Table 1, Arizona Population Projections - Counties and Places 1986-2035, December, 1986.

² Pharmacists per 100,000 population.

Source: Pharmacy Board, Computer printout, July 9, 1987.



REGISTERED PHARMACISTS IN ARIZONA, 1987 BY COMMUNITY

[illegible]

Physical Therapists in Arizona

Physical therapists use several techniques to restore function or prevent disability in limbs and muscles. The techniques used can include: therapeutic exercise; heat; cold; electricity; ultrasound; traction; and massage along with assistive, supportive and prosthetic devices.

Physical therapists are employed by hospitals, rehabilitation centers, schools or public health agencies. They are licensed by the Arizona State Board of Physical Therapy Examiners.

There were 565 physical therapists in Arizona in 1984, with 72 of them in the rural counties. In January of 1987, there were 765 physical therapists and 94 of those were in rural counties. In 1984, the overall state ratio of physical therapists in Arizona per 100,000 population was 19, with a ratio of 10 in the rural counties. The ratio in 1987 was 22 statewide and 11 in the rural counties.¹

The national ratio was 34 in 1987.²

There is a training program for a bachelor of science degree concentrating in physical therapy at Northern Arizona University in Flagstaff. Given the location of the training center, it is not surprising Coconino County showed a major increase in the actual number of providers from 20 physical therapists in 1984 to 32 in 1987 — an increase of 60%.

However, gains in Gila, Mohave and Yuma Counties were even more impressive, but on a smaller scale. Gila County increased from 2 physical therapists to 6 (up 200%), Mohave County went from 4 to 7 (75%) and Yuma County went from 6 to 10 (66%).

Navajo County lost 2 physical therapists (from 5 to 3) and Cochise and Graham Counties lost 1 each. Greenlee County continued to be without a physical therapist.

¹ Compiled from the Arizona State Board of Physical Therapy Examiners, *Physical Therapy 1987 Directory*, and *The Arizona Rural Health Provider Atlas*, 1984, p. 48.

² Information provided by the Arizona State Board of Physical Therapy Examiners, July 30, 1987.

TABLE 32

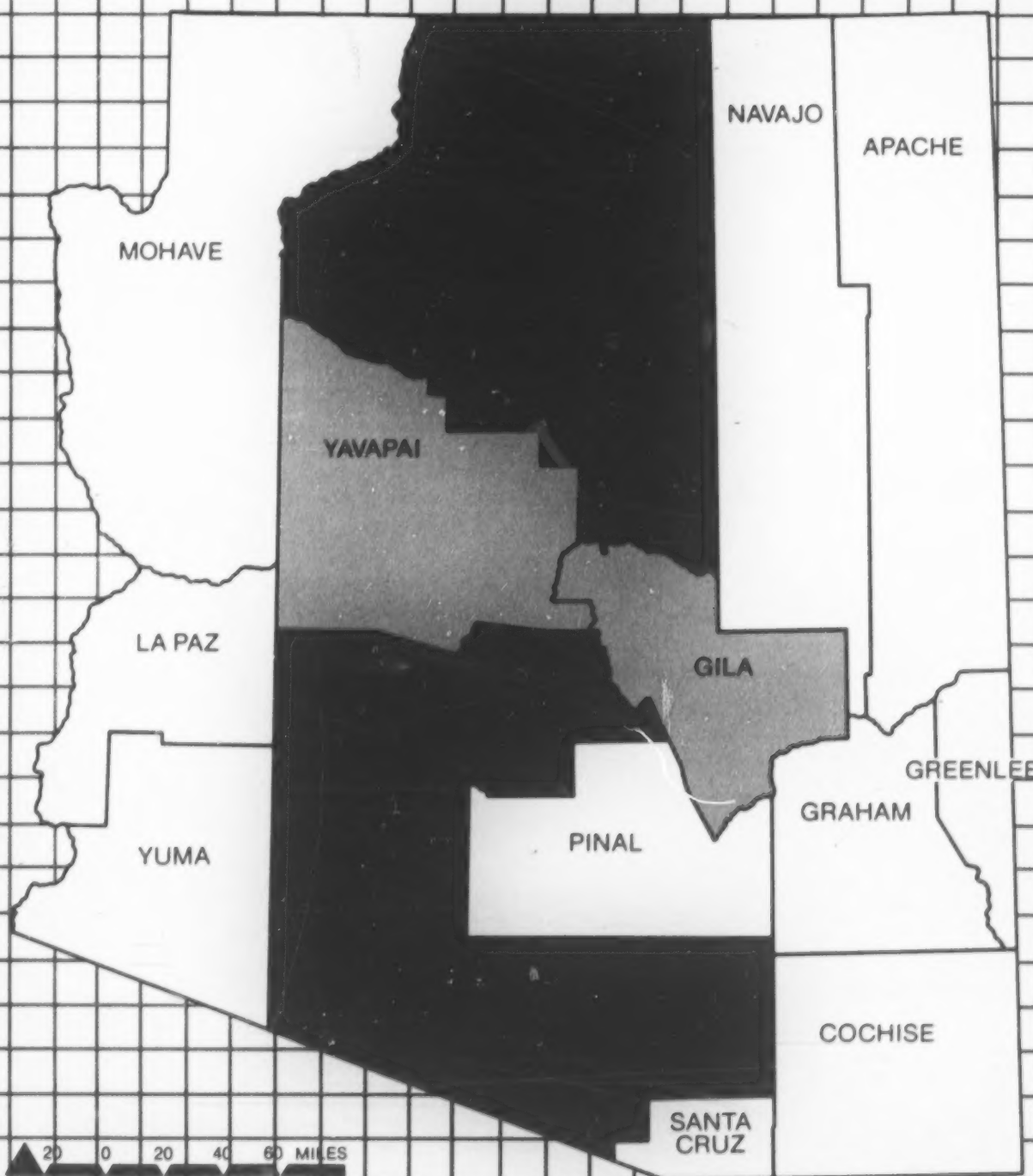
LICENSED PHYSICAL THERAPISTS IN ARIZONA, 1987 BY COUNTY

<i>Counties Without an SMSA</i>	<i>Physical Therapists</i>	<i>1987 Population¹</i>	<i>Ratio²</i>
Apache	2	62,400	3
Cochise	9	100,300	9
Coconino	32	91,900	35
Gila	6	40,100	15
Graham	1	24,700	4
Greenlee	0	9,600	0
La Paz	1	14,200	7
Mohave	7	79,300	9
Navajo	3	75,700	4
Pinal	6	107,200	6
Santa Cruz	3	29,200	10
Yavapai	14	95,000	15
Yuma	10	89,500	11
	94	819,100	11
<i>Counties With an SMSA</i>			
Maricopa	494	1,990,800	25
Pima	177	659,100	27
	671	2,649,900	25
Arizona Total =	765	3,469,000	22

¹ Arizona Department of Economic Security, Population Statistics Unit, Table 1, Arizona Population Projections - Counties and Places 1986-2035, December, 1986.

² Physical Therapists per 100,000 population.

Source: Arizona State Board of Physical Therapy Examiners, computer printout, July, 1987.



20 0 20 40 60 MILES

MAP 29

Physical Therapists
PER 100,000 POPULATION, 1987

0-11 ☐

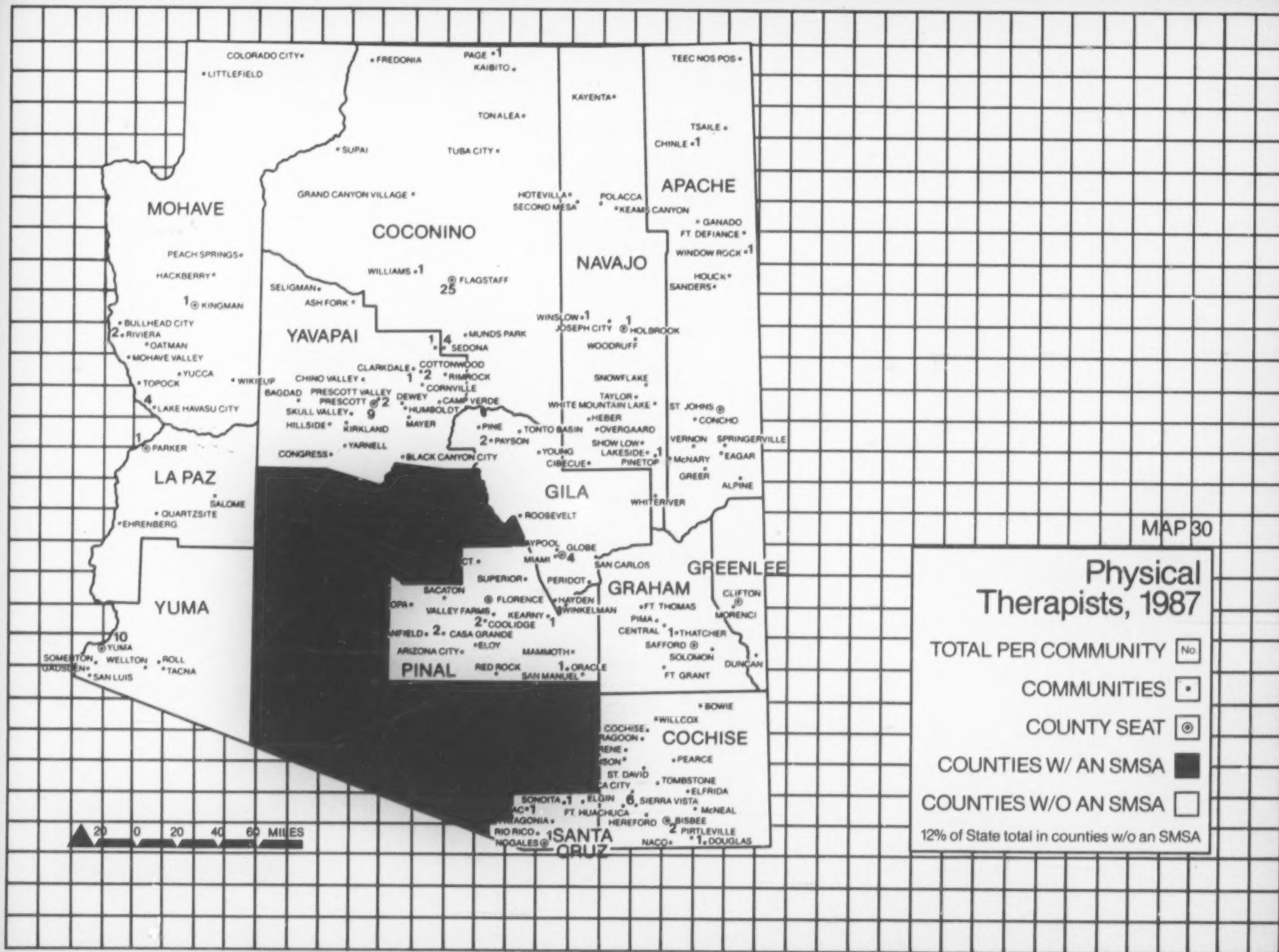
12-23 ☐

24 or more ☐

TABLE 33

LICENSED PHYSICAL THERAPISTS IN ARIZONA, 1987 BY COMMUNITY

Apache County		La Paz County		Pima County		Total Counties Without an SMSA	
Chinle	1	Parker	1	Green Valley	2		94
Window Rock	1	Total	1	Tucson	175		
Total	2	Maricopa County		Total	177	Counties With an SMSA	
Cochise County		Ahwatukee	1	Pinal County		Maricopa	494
Bisbee	2	Avondale	1	Casa Grande	2	Pima	177
Douglas	1	Carefree	1	Coolidge	2		671
Sierra Vista	6	Cave Creek	3	Kearny	1	Arizona Total =	765
Total	9	Chandler	25	San Manuel	1		
		Fountain Hills	1	Total	6	Source: Arizona State Board of Physical Therapy Examiners, computer printout, 1987.	
Coconino County		Gilbert	5				
Flagstaff	25	Glendale	32	Santa Cruz County			
Page	1	Litchfield Park	3	Nogales	1		
Sedona	4	Mesa	58	Sonoita	1		
W. Sedona	1	Paradise Valley	3	Tubac	1		
Williams	1	Peoria	5	Total	3		
Total	32	Phoenix	232				
		Queen Creek	1	Yavapai County			
Gila County		Scottsdale	62	Clarkdale	1		
Globe	4	Sun City	2	Cottonwood	2		
Payson	2	Tempe	55	Prescott	9		
Total	6	Wickenburg	3	Prescott Valley	2		
		Youngtown	1	Total	14		
Graham County		Total	494				
Thatcher	1	Mohave County		Yuma County			
Total	1	Kingman	1	Yuma	10		
Greenlee County		Lake Havasu City	4	Total	10		
Total	0	Riviera	2				
		Total	7				
		Navajo County					
		Holbrook	1				
		Pinetop	1				
		Winslow	1				
		Total	3				



Physician Assistants in Arizona

Physician assistants, who sometimes come under the generic heading "physician extender" or "midlevel," provide primary health care services under the responsible supervision of a licensed physician. Under specific guidelines, some PAs (mainly those in rural areas) are allowed to write prescriptions.

Physician assistants can be found working in offices of private physicians in family and surgical practices, hospitals, industries, health maintenance organizations (HMOs), prisons, community health clinics and in long-term care facilities. PAs are licensed through the Arizona State Board of Medical Examiners.

There were 172 physician assistants in Arizona in 1984, with 53 of them in the rural counties. In March of 1987, there were 215 PAs in the state, with 64 in the rural counties. In both 1984 and 1987, PAs in rural counties represented about 30% of the total number in the state.¹

Physician assistants, while few in number compared to other types of health providers in Arizona, are more concentrated in non-Standard Metropolitan Statistical Areas. The distribution of PAs in Arizona is consistent with the national pattern which shows PAs to be somewhat more responsive than physicians in serving in primary care practices in underserved areas.

In 1984, the state ratio for PAs in Arizona per 100,000 population was 6 overall and 7 in the rural counties. In 1987, the overall figure remained the same (6) and the ratio in the rural areas moved up to 8.

The national ratio was 9.5 per 100,000 in 1987.²

Graham County tops all rural counties with 12 PAs (a 100% increase over 1984). All 12 are in Safford which has a state and a federal prison.³

The following counties exceeded the state ratio of 6: Graham led the way at 49; La Paz, 14; Navajo, 12; Greenlee, 10; and Cochise and Mohave both at 9.

Gila County continued to be without a PA. Greenlee County picked up its first PA, while Santa Cruz lost the one it had in 1984.

¹ Compiled from an Arizona State Association of Physician Assistants, list of known physician assistants in Arizona, March, 17, 1987, and *The Arizona Rural Health Provider Atlas*, 1984, p. 52.

² Information provided by the Arizona State Association of Physician Assistants, July 31, 1987.

³ Interview with Ron Butlin, president of the Arizona State Association of Physician Assistants, July 15, 1987, and Dave Larson, the immediate past president, July 14, 1987.

TABLE 34

LICENSED PHYSICIAN ASSISTANTS IN ARIZONA, 1987 BY COUNTY

<i>Counties Without an SMSA</i>	<i>Physician Assistants</i>	<i>1987 Population¹</i>	<i>Ratio²</i>
Apache	3	62,400	5
Cochise	9	100,300	9
Coconino	4	91,900	4
Gila	0	40,100	0
Graham	12	24,700	49
Greenlee	1	9,600	10
La Paz	2	14,200	14
Mohave	7	79,300	9
Navajo	9	75,700	12
Pinal	7	107,200	6
Santa Cruz	0	29,200	0
Yavapai	5	95,000	5
Yuma	5	89,500	6
	64	819,100	8
<i>Counties With an SMSA</i>			
Maricopa	129	1,990,800	6
Pima	22	659,100	3
	151	2,649,900	6
Arizona Total =	215	3,469,000	6

¹ Arizona Department of Economic Security, Population Statistics Unit, Table 1, Arizona Population Projections - Counties and Places 1986-2035, December, 1986.

² PAs per 100,000 population.

Source: Arizona State Association of Physician Assistants, list of known physician assistants in Arizona, March 17, 1987.

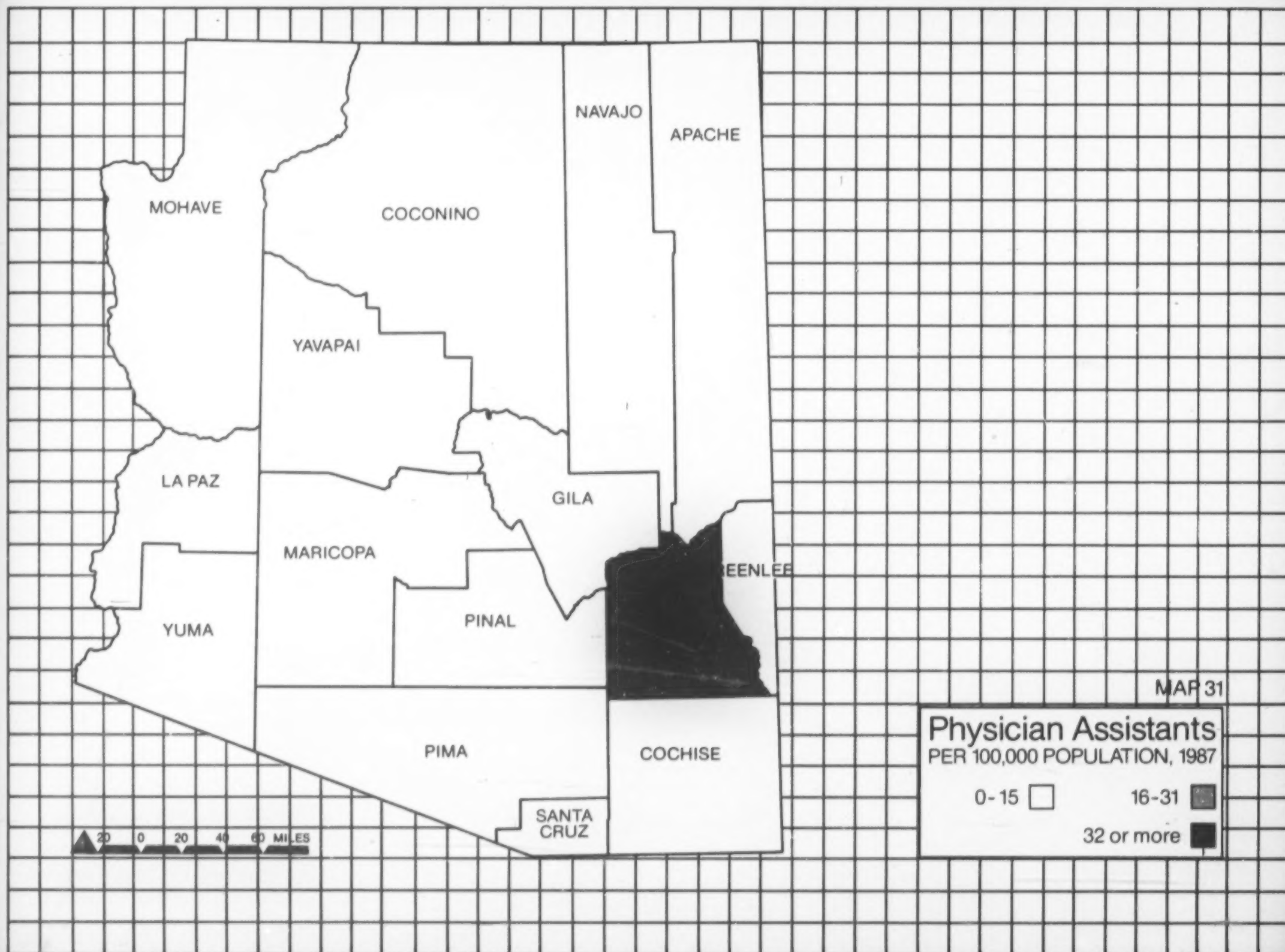
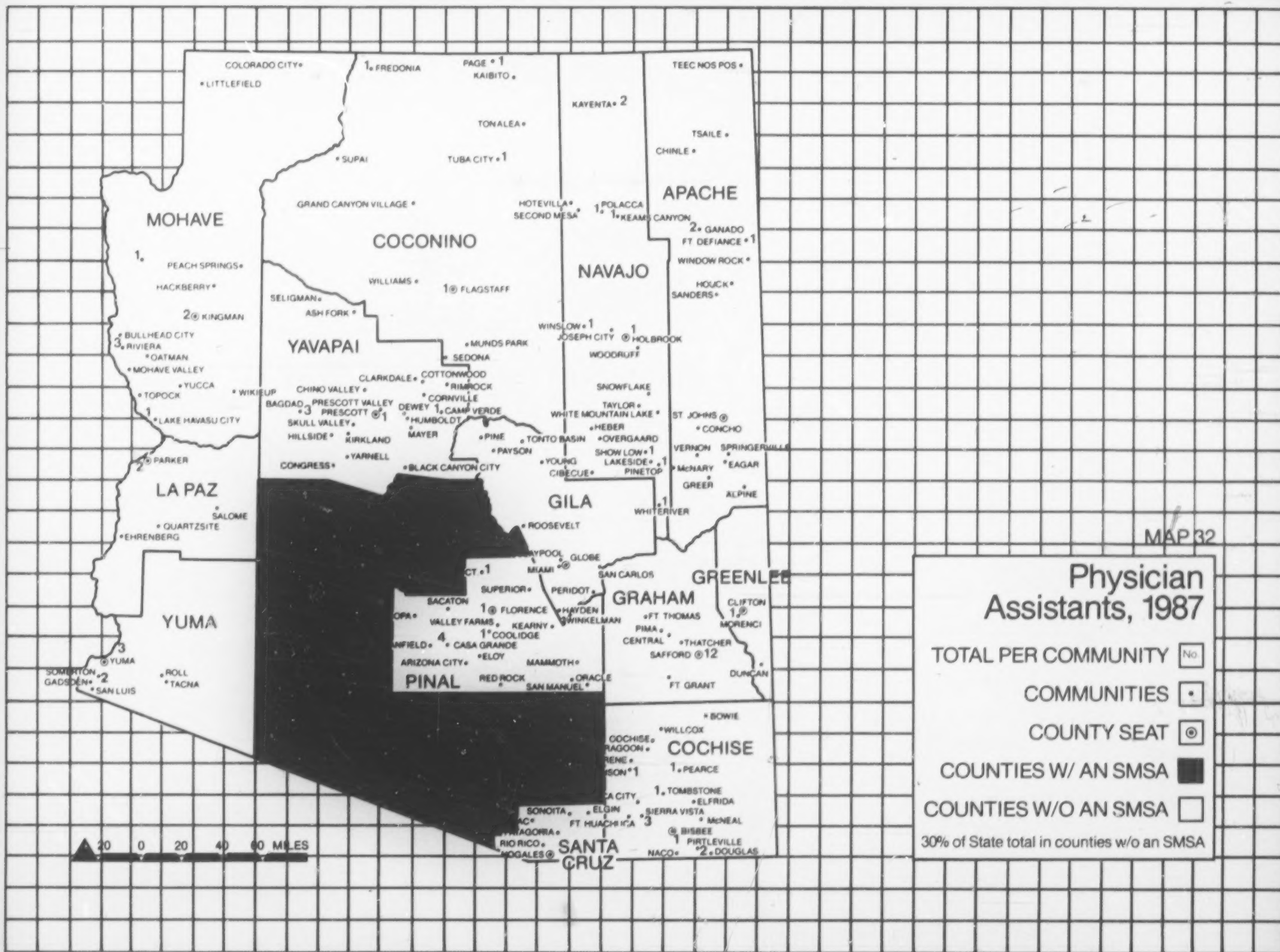


TABLE 35

LICENSED PHYSICIAN ASSISTANTS IN ARIZONA, 1987 BY COMMUNITY

Apache County		La Paz County		Pima County		Total Counties Without an SMSA	64
Ft. Defiance	1	Parker	2	Marana	1		
Ganado	2	Total	2	Sahuarita	1	Counties With an SMSA	
Total	3			Tucson	20	Maricopa	129
Cochise County		Maricopa County		Total	22	Pima	22
Benson	1	Avondale	1				151
Bisbee	1	Buckeye	2	Pinal County			
Douglas	2	Carefree	1	Apache Junction	1	Arizona Total =	215
Pearce	1	Chandler	11	Casa Grande	4		
Sierra Vista	3	Fountain Hills	1	Coolidge	1		
Tombstone	1	Gila Bend	1	Florence	1		
Total	9	Glendale	10	Total	7		
		Mesa	18				
Coconino County		Morristown	1	Santa Cruz County			
Flagstaff	1	Peoria	2	Total	0		
Fredonia	1	Phoenix	62				
Page	1	Scottsdale	4	Yavapai County			
Tuba City	1	Tempe	15	Bagdad	3		
Total	4	Total	129	Camp Verde	1		
		Mohave County		Prescott	1		
Gila County		Dolan Springs	1	Total	5		
Total	0	Kingman	2				
		Lake Havasu City	1	Yuma County			
Graham County		Riviera	3	Somerton	2		
Safford	12	Total	7	Yuma	3		
Total	12			Total	5		
		Navajo County					
Greenlee County		Holbrook	1				
Morenci	1	Kayenta	2				
Total	1	Keams Canyon	1				
		Pinetop	1				
		Polacca	1				
		Show Low	1				
		Whiteriver	1				
		Winslow	1				
		Total	9				

Source: Arizona State Association of Physician Assistants, list of known physician assistants in Arizona, March 17, 1987.



Physicians In Arizona Doctors of Osteopathy — DO

The prevention, care and alleviation of disease is the goal of both Doctors of Medicine (MDs) and Doctors of Osteopathy (DOs). Both types of physicians use surgery, drugs and other accepted methods of medical care.

Osteopathic medicine differs from allopathic medicine by emphasizing the importance of the normal body mechanics and manipulative methods of detecting and correcting faulty structure. In the U.S., MDs far outnumber DOs, with DOs representing approximately 4 or 5% of physicians. In Arizona, DOs represented 9% of all physicians in 1987, as they did in 1984.

In 1984, there were 491 DOs in Arizona, with 49 in the rural counties. The overall ratio of DOs per 100,000 population in Arizona was 16 and 7 in the rural counties.

In 1987, there were 567 DOs, with 64 in the rural counties. The overall state ratio remained at 16 and the rural ratio went up to 8.¹

The 1983 national ratio was 7.6.² Arizona continued to outpace this national average by more than 2-to-1.

Cochise County showed an increase in actual numbers of DOs from 8 to 16 — an increase of 100%. Gila County moved up from 2 to 4 (also 100%), Mohave County moved up from 3 to 7 (more than 100%), Navajo County was up from 1 to 7 (up 600%) and Yuma County was up from 4 to 7 (up 75%).

Apache County dropped from 2 DOs to 1 and La Paz County dropped from 10 to 7 (down 30%). Graham and Santa Cruz Counties were still without a DO as they were in 1984.

¹ Arizona State Board of Osteopathic Examiners, *Osteopathic Physicians 1986 Directory*, with 1987 updates, and *The Arizona Rural Health Provider Atlas*, 1984, p. 56.

² U.S. Department of Health and Human Services, *Health, United States 1985*, Table 65, 1985, p. 109.

TABLE 36

LICENSED OSTEOPATHIC PHYSICIANS (DO) IN ARIZONA, 1987 BY COUNTY

Counties Without an SMSA	DOs	1987 Population ¹	Ratio ²
Apache	1	62,400	2
Cochise	16	100,300	16
Coconino	6	91,900	6
Gila	4	40,100	10
Graham	0	24,700	0
Greenlee	1	9,600	10
La Paz	7	14,200	49
Mohave	7	79,300	9
Navajo	2	75,700	3
Pinal	6	107,200	6
Santa Cruz	0	29,200	0
Yavapai	7	95,000	7
Yuma	7	89,500	8
	64	819,100	8
Counties With an SMSA			
Maricopa	400	1,990,800	20
Pima	103	659,100	16
	503	2,649,900	19
Arizona Total =	567	3,469,000	16

¹ Arizona Department of Economic Security, Population Statistics Unit, Table 1, Arizona Population Projections - Counties and Places 1986-2035, December, 1986.

² DOs per 100,000 population.

Source: Arizona State Board of Osteopathic Examiners, *Osteopathic Physicians 1986 Directory*, with 1987 updates.

Physicians (DO)

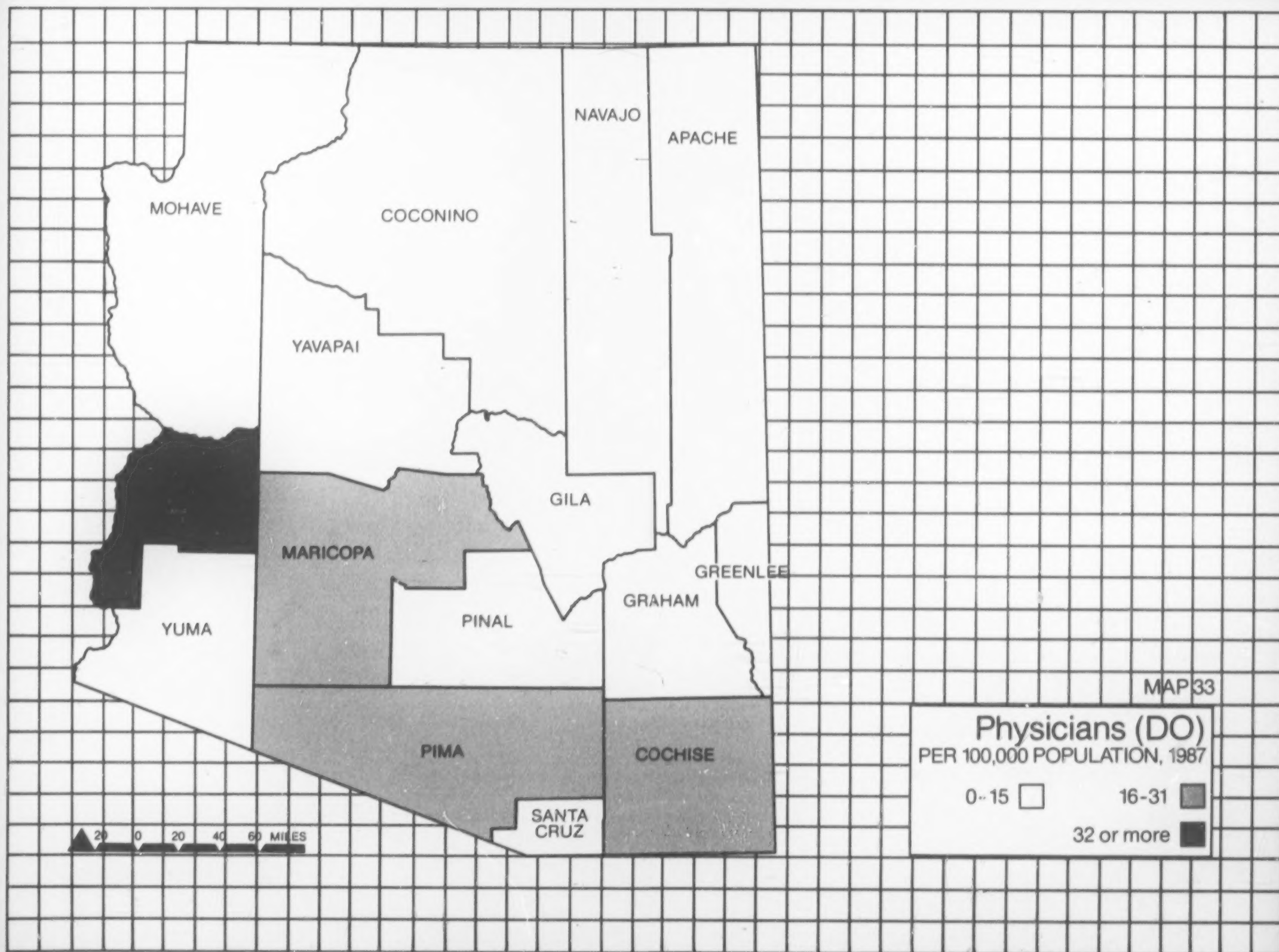
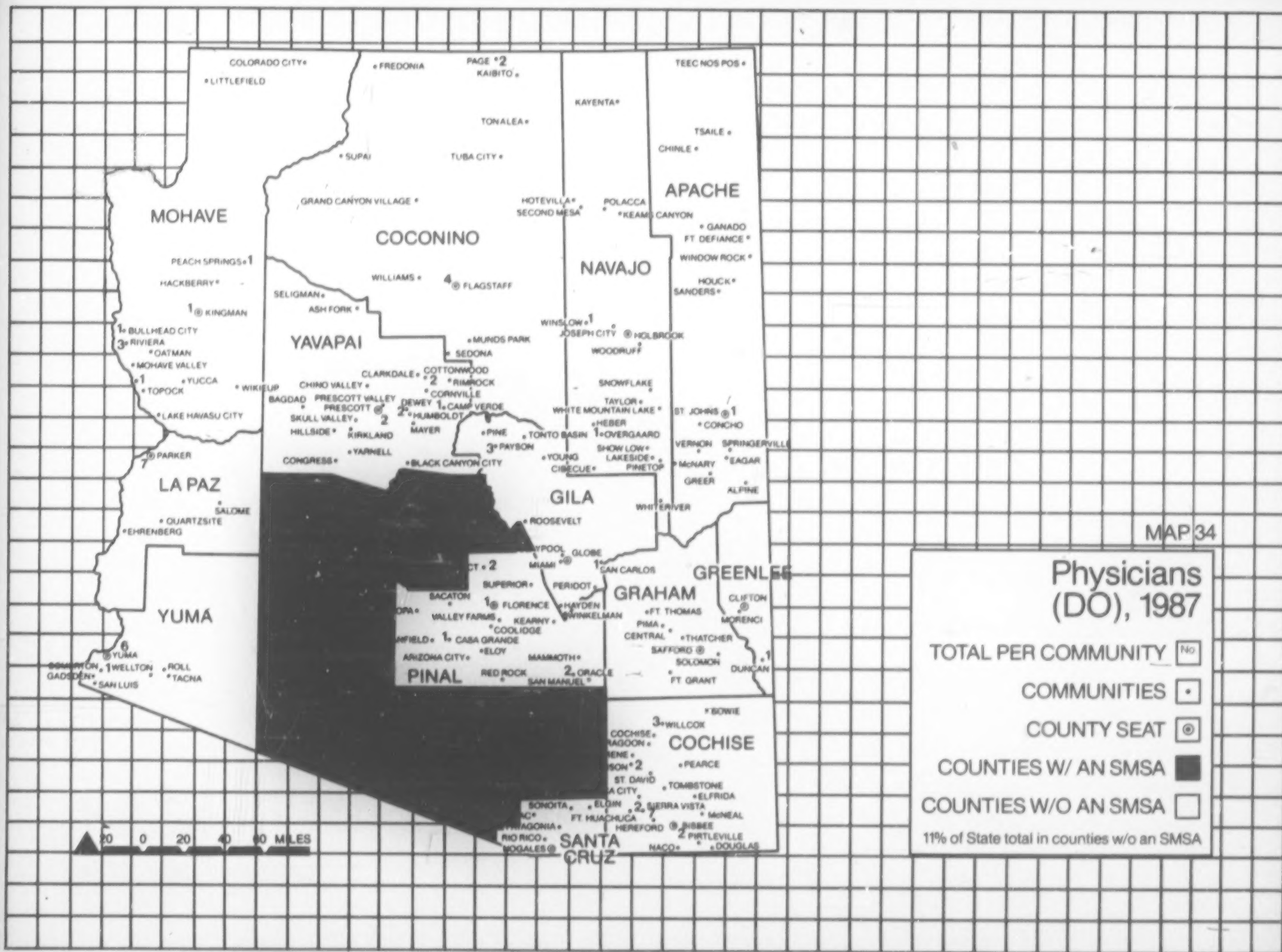


TABLE 37

LICENSED OSTEOPATHIC PHYSICIANS (DO) IN ARIZONA, 1987 BY COMMUNITY

Apache County		La Paz County		Pima County		Total Counties Without an SMSA	
St. Johns	1	Parker	7	Marana	1		64
Total	1	Total	7	Sells	2		
Cochise County		Maricopa County		Tucson	100	Counties With an SMSA	
Benson	2	Avondale	2	Total	103	Maricopa	400
Bisbee	2	Carefree	1	Pinal County		Pima	103
Ft. Huachuca	2	Chandler	5	Apache Junction	2		503
Sierra Vista	7	Gilbert	2	Casa Grande	1		
Willcox	3	Glendale	26	Florence	1		
Total	16	Litchfield Park	1	Oracle	2		
Coconino County		Mesa	68	Total	6	Arizona Total =	
Flagstaff	4	Peoria	1				567
Page	2	Phoenix	231	Santa Cruz County		Source: Arizona State Board of Osteopathic Examiners, Osteopathic Physicians 1986 Directory, with 1987 updates.	
Total	6	Scottsdale	35	Total	0		
Gila County		Sun City	4	Yavapai County			
Payson	3	Sun City West	2	Camp Verde	1		
San Carlos	1	Sun Lakes	1	Cottonwood	2		
Total	4	Tempe	18	Dewey	2		
Graham County		Tolleson	1	Prescott	2		
Total	0	Youngtown	2	Total	7		
Greenlee County		Total	400	Yuma County			
Duncan	1	Mohave County		Somerton	1		
Total	1	Bullhead City	1	Yuma	6		
		Ft. Mohave	1	Total	7		
		Kingman	1				
		Peach Springs	1				
		Riviera	3				
		Total	7				
		Navajo County					
		Overgaard	1				
		Winslow	1				
		Total	2				



Physicians in Arizona (Medical Doctors — MD)

Physicians are the gatekeepers to the health care system. The location and type of practice they develop largely determines the availability of most other health services.

The absence of a physician in an area can create difficult problems for people trying to gain health care. According to Rosenblatt and Moscovice (*Rural Health Care*, 1982, p. 63), active non-federal physicians in 1976 located their practices within an SMSA (Maricopa and Pima Counties in Arizona) rather than outside an SMSA (the rural counties) by more than 2-to-1. This same national pattern was evident in Arizona in 1984 and continued in 1987.

In 1984, there were 5,094 MDs in Arizona, with 545 of them in the rural counties. The ratio of MDs in Arizona per 100,000 population was 168 overall and 74 in the rural counties.

In 1987, there were 5,719 MDs in the state, with 670 of them in the rural counties. The overall state ratio dropped to 165, but increased to 82 in the rural counties.¹ This can be partially explained by the population "boom" in Arizona. The increase in population surpassed the increase in physician supply.

Pima County, with a ratio of 222, was the only Arizona county to be above the 1983

national ratio of 190.² It is the location of the state's only medical school. Maricopa County was 10 points below at 180. All 13 rural counties continued to be well below the 1983 national ratio, despite a 23% increase in the number of physicians from 1984 (545 to 670).

Rural Counties showing the highest percent increase in actual number of MDs were La Paz, up from 2 to 5 (more than 100%), Mohave from 56 to 77 (up 38%) and Santa Cruz from 11 to 18 (up 64%). Greenlee was the only county to drop in numbers, falling from 6 MDs to 2.

Increases in the number of physicians may mask pockets of underserved areas. Nationally, the supply of active non-federal physicians relative to population has grown at the slowest rate in poor urban areas and in the least-populated rural counties. In Arizona, the trend is similar, but more pronounced because of the large geographic area of the state and low density of the population. A California study concluded that increases in the supply of physicians alone will not ensure the decrease in the number of the state's medically underserved areas.³

¹ Compiled from the Arizona State Board of Medical Examiners, *Arizona State Medical Directory*, 1987, and *The Arizona Rural Health Provider Atlas*, 1984, p. 60.

TABLE 38

LICENSED PHYSICIANS (MD) IN ARIZONA, 1987 BY COUNTY

Counties Without an SMSA	MDs ¹	1987 Population ²	Ratio ³
Apache	30	62,400	48
Cochise	70	100,300	70
Coconino	105	91,900	114
Gila	34	40,100	85
Graham	10	24,700	40
Greenlee	2	9,600	21
La Paz	5	14,200	35
Mohave	77	79,300	97
Navajo	39	75,700	51
Pinal	62	107,200	58
Santa Cruz	18	29,200	62
Yavapai	115	95,000	121
Yuma	103	89,500	115
	670	819,100	82
Counties With an SMSA			
Maricopa	3,588	1,990,800	180
Pima	1,461	659,100	222
	5,049	2,649,900	190
Arizona Total =	5,719	3,469,000	165

¹ Includes University, Prison, Veteran's Administration (VA), Military, National Health Service Corps (NHSC) and only those Indian Health Service (IHS) physicians that are listed in the *Arizona State Medical Directory*, 1986-1987, (BOMEX) (27 out of 184)...See IHS section for complete data set.

² Arizona Department of Economic Security, Population Statistics Unit, Table 1, *Arizona Population Projections - Counties and Places 1986-2035*, December, 1986.

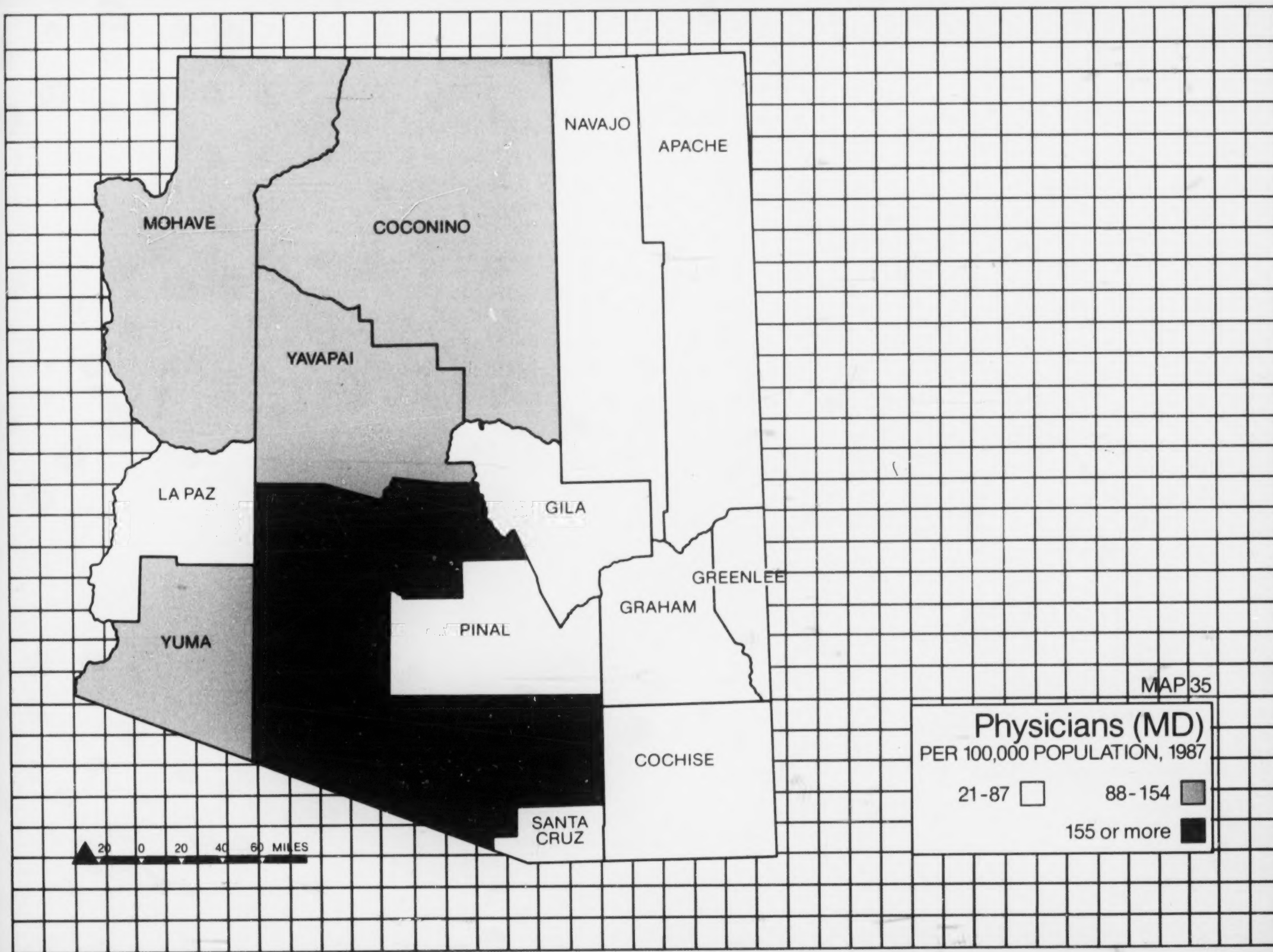
³ MDs per 100,000 population.

Source: Arizona State Board of Medical Examiners, *Arizona State Medical Directory*, 1986-1987.

² U.S. Department of Commerce, Bureau of Census, *1987 Statistical Abstract of the United States*, 107th Edition, p. 109.

³ California Office of Statewide Health Planning and Development, *Urban Health*, 1984. See section in *Atlas on HMSA and MUA*.

Physicians (MD)



LICENSED PHYSICIANS (MD) IN ARIZONA, 1987 BY COMMUNITY

Source: Arizona State Board of Medical Examiners, *Arizona State Medical Directory*, 1986-1987.

Primary Care Physicians (DO and MD) in Arizona

Primary care is the branch of medicine generally responsible for comprehensive patient care and it is the first point of entry into the health care system. The field of primary care includes family practice, general practice and internal medicine, obstetrics and gynecology and pediatrics.

In 1984, there were 2,315 primary care physicians in Arizona — 1,972 of them were MDs and 343 were DOs. In the rural counties, there were 346 primary care physicians — 306 of them were MDs and 40 were DOs. The state ratio of primary care physicians per 100,000 population was 76 overall and 47 in the rural areas.

As of July, 1987, there were 2,604 primary care physicians in Arizona — 2,255 of them were MDs and 349 were DOs. In the rural areas, there were 384 primary care physicians — 348 of them MDs and 36 were DOs. The state ratio was down to 75 overall and remained constant at 47 in the rural counties.¹

The national ratio in 1981 was 73.4.²

All 13 rural counties still fall far below the state ratio, as they did in 1984, but there were increases in the actual number of providers. Mohave County moved up from 30 to 40 providers — a 33% increase. Pinal County moved from 35 to 41

(up 17%), Santa Cruz County moved from 7 to 13 (up 86%) and Yuma County gained 1 DO and 10 MDs to move up from 42 to 53 (26%).

Navajo County dropped from 27 primary care physicians to 22 (down 18%).

¹ Compiled from the Arizona State Board of Medical Examiners, *Arizona State Medical Directory* 1986-1987, with supplementary updates, the Arizona Board of Osteopathic Examiners in Medicine and Surgery, *Osteopathic Physicians 1986 Directory*, with 1987 updates, and *The Arizona Rural Health Provider Atlas*, 1984, p. 64.

² *The Arizona Rural Health Provider Atlas*, p. 64.

Homeopaths

Homeopaths use treatments which they claim stimulate the innate healing ability of the body by using small amounts of substances which cause symptoms similar to the disease. This is based on a theory that like cures like.

Homeopathic physicians are licensed by the Arizona Board of Homeopathic Medical Examiners. Arizona is 1 of only 3 states that license homeopaths. Nevada and Connecticut are the other 2. A Homeopath must be a licensed M.D. or D.O. and have further training in Homeopathy.¹

TABLE 40

PRIMARY CARE PHYSICIANS (DO and MD) IN ARIZONA, 1987 BY COUNTY

Counties Without an SMSA	DOs ¹	MDs ¹	Total	1987 Population ²	Ratio ³
Apache	0	19	19	62,400	30
Cochise	11	40	51	100,300	51
Coconino	4	46	50	91,900	54
Gila	2	21	23	40,100	57
Graham	0	8	8	24,700	32
Greenlee	1	2	3	9,600	31
La Paz	3	4	7	14,200	49
Mohave	3	37	40	79,300	50
Navajo	2	20	22	75,700	29
Pinal	3	38	41	107,200	38
Santa Cruz	0	13	13	29,200	44
Yavapai	3	51	54	95,000	57
Yuma	4	49	53	89,500	59
	36	348	384	819,100	47

Counties With an SMSA	DOs ¹	MDs ¹	Total	1987 Population ²	Ratio ³
Maricopa	246	1,384	1,630	1,990,800	82
Pima	67	523	590	659,100	89
	313	1,907	2,220	2,649,900	84

Arizona Total =	349	2,255	2,604	3,469,000	75
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¹ Arizona Department of Economic Security, Population Statistics Unit, Table 1, Arizona Population Projections - Counties and Places 1986-2035, December, 1986.

² Primary Care physicians (DOs and MDs) per 100,000 population.

Source: Arizona State Board of Medical Examiners, *Arizona State Medical Directory*, 1986-1987, with supplementary updates, and Arizona State Board of Osteopathic Examiners in Medicine and Surgery, *Osteopathic Physicians 1986 Directory*, with 1987 updates.

There were 28 homeopaths licensed in Arizona at the beginning of 1987, but only 16 of those actually practice in the state.²

Maricopa County accounted for most of the homeopathic physicians with 14. The other 2 were located in Coconino and

Yavapai Counties.

¹ Interview with Dr. John C. Reed, president of the Arizona Board of Homeopathic Medical Examiners, June 15, 1987.

² Homeopathic Board Licensees List, December, 1986.

Physicians
(Primary Care)

TABLE 41

PRIMARY CARE PHYSICIANS DO and MD IN ARIZONA, 1987 BY COMMUNITY

	DO		MD	
	Non-Federal	Federal	Non-Federal	Federal
Apache County				
Alpine	0	0	1	0
Ganado	0	0	8	2
Springerville	0	0	7	0
St. Johns	0	0	1	0
Total	0	0	17	2
Cochise County				
Benson	2	0	2	0
Bisbee	2	0	3	0
Douglas	0	0	9	1
Ft. Huachuca	0	1	0	7
Sierra Vista	3	0	14	0
Tombstone	0	0	0	1
Willcox	3	0	3	0
Total	10	1	31	9
Coconino County				
Flagstaff	2	0	33	0
Fredonia	0	0	1	0
Page	2	0	5	0
Sedona	0	0	2	0
West Sedona	0	0	3	0
Williams	0	0	2	0
Total	4	0	46	0
Gila County				
Claypool	0	0	4	0
Globe	0	0	6	0
Miami	0	0	3	0
Payson	2	0	7	0
Young	0	0	1	0
Total	2	0	21	0
Graham County				
Safford	0	0	8	0
Total	0	0	8	0

	DO		MD	
	Non-Federal	Federal	Non-Federal	Federal
Greenlee County				
Clifton	0	0	1	0
Duncan	1	0	0	0
Morenci	0	0	1	0
Total	1	1	0	2
La Paz County				
Parker	2	1	2	2
Total	2	1	2	2
Maricopa County				
Avondale	2	0	2	0
Buckeye	0	0	4	0
Carefree	1	0	2	0
Chandler	3	0	30	3
El Mirage	0	0	3	0
Fountain Hills	0	0	4	0
Gilbert	2	0	5	0
Glendale	21	0	68	3
Goodyear	0	0	2	0
Guadalupe	0	0	0	1
Litchfield Park	1	0	1	0
Mesa	48	0	108	0
Paradise Valley	0	0	11	0
Peoria	1	0	19	0
Phoenix	123	0	787	20
Queen Creek	0	0	1	0
Scottsdale	25	0	133	0
Sun City	3	0	62	0
Sun City West	0	0	4	0
Tempe	13	0	104	0
Tolleson	1	0	1	0
Wickenburg	0	0	5	0
Youngtown	2	0	1	0
Total	246	0	1,357	27

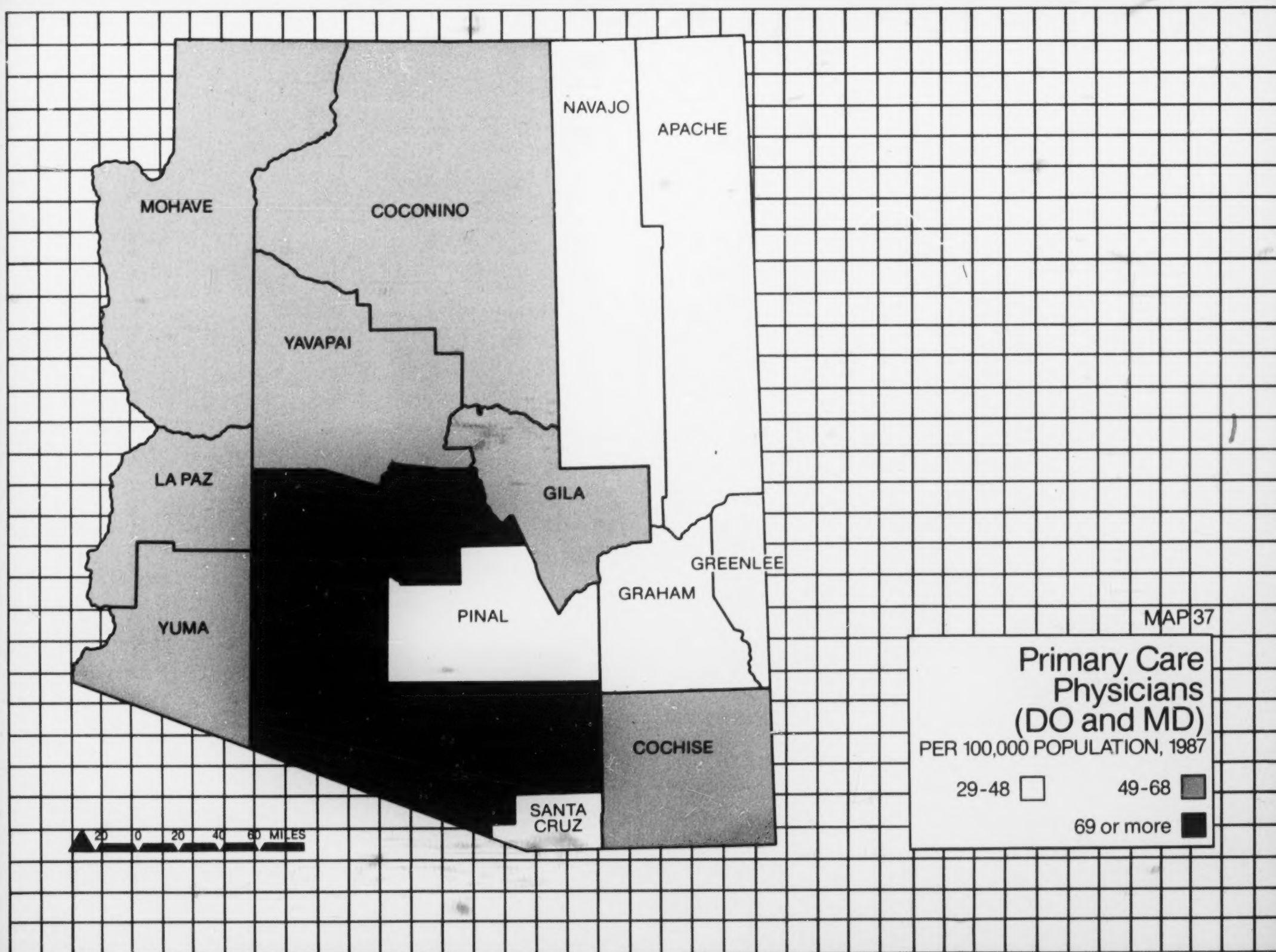
	DO		MD	
	Non-Federal	Federal	Non-Federal	Federal
Mohave County				
Bullhead City	1	0	9	0
Kingman	0	0	12	0
Lake Havasu City	0	0	15	0
Riviera	2	0	0	0
Topock	0	0	1	0
Total	3	0	37	0
Navajo County				
Cibecue	0	0	1	0
Holbrook	0	0	2	0
Lakeside	0	0	9	0
Overgaard	0	1	0	0
Pinetop	0	0	4	0
Whiteriver	0	0	0	1
Winslow	1	0	3	0
Total	1	1	19	1
Pima County				
Ajo	0	0	2	0
Green Valley	0	0	10	0
Marana	0	0	1	1
Sells	1	0	0	0
Tucson	66	0	493	16
Total	67	0	506	17
Pinal County				
Apache Junction	2	0	4	0
Casa Grande	0	0	19	1
Coolidge	0	0	4	0
Eloy	0	0	1	0
Florence	1	0	4	0
Kearny	0	0	2	0
San Manuel	0	0	3	0
Total	3	0	37	1

	DO		MD	
	Non-Federal	Federal	Non-Federal	Federal
Santa Cruz County				
Nogales	0	0	9	3
Tubac	0	0	1	0
Total	0	0	10	3
Yavapai County				
Camp Verde	0	0	2	0
Cornville	0	0	1	0
Cottonwood	0	0	7	0
Dewey	1	0	0	0
Prescott	2	0	31	6
Prescott Valley	0	0	3	0
Yarnell	0	0	1	0
Total	3	0	45	6
Yuma County				
Somerton	1	0	1	0
Wellton	0	0	1	1
Yuma	2	1	46	0
Total	3	1	48	1
Total Counties Without an SMSA				
	32	4	323	25
Counties With an SMSA				
Maricopa	246	0	1,357	27
Pima	67	0	506	17
Total	313	0	1,863	44
Arizona Total =	345	4	2,186	69

Note: Federal physicians include those in the Military, Veteran's Administration (VA) and Public Health Service. Indian Health Service personnel are not included. See the IHS section for complete data set on primary care physician supply.

Primary Care includes the fields of family practice, general practice, internal medicine, obstetrics-gynecological and pediatrics.

Source: Arizona State Board of Osteopathic Examiners in Medicine and Surgery, *Osteopathic Physicians 1986 Directory*, with 1987 updates, and the Arizona State Board of Medical Examiners, *Arizona State Medical Directory*, 1986-1987, with updates.



Arizona Health Care Cost Containment System (AHCCCS) Physicians

The Arizona Health Care Cost Containment System (AHCCCS) is the United States' first statewide-run, prepaid health care plan for people with low incomes. The program, initiated in October of 1982, had 215,510 members as of May 31, 1987.

The program is run as a partnership between the government and private sectors using competitive bidding, risk sharing and prepaid individual contracts to provide services. AHCCCS uses federal, state and county funds, but it is not a part of the fee-for-service national Medicaid program.¹

Prior to AHCCCS, each county in Arizona set up its own eligibility standards and benefits for state-supported indigent care. Now, the requirements and benefits are uniform throughout the state.

AHCCCS, as a result of legislation,² will begin offering long-term care in October of 1988. Legislation will also raise the age of children eligible for AHCCCS from 6-and-under to 14-and-under.

AHCCCS also has developed a new program for the working uninsured called Health Care Group (HCG). It is expected to be in full operation by January of 1988.³ Businesses with 25 or fewer full-time employees who have not been insured during

the previous 6 months will be eligible for HCG. Under the plan, employers will be able to choose from 4 health care benefit option packages for their employees and their dependents. Full-time, self-employed people will also be eligible for membership.

Currently, there are 4 health plans under contract with AHCCCS in Maricopa and Pima Counties and at least 2 each in all the other counties. Each health plan is required to contract with a network of primary care providers and specialists in each county to provide the full range of the program's services. The health plans are issued as 1-year contracts with renewal options.

Approximately 70% of all licensed physicians in Arizona are registered AHCCCS providers.⁴ In the rural counties, the numbers are even higher (80%). Physicians may participate as subcontractors or as employees of 1 of the health plans contracted with AHCCCS. Both primary care and specialty physicians are paid by the plans in a variety of ways. These include fee-for-service reimbursement based on billed charges, negotiated fee schedules, or on an individual (capitated) member rate per month.

Members are required to pay a \$1 co-payment for each

TABLE 42

AHCCCS HEALTH PLAN OPTIONS

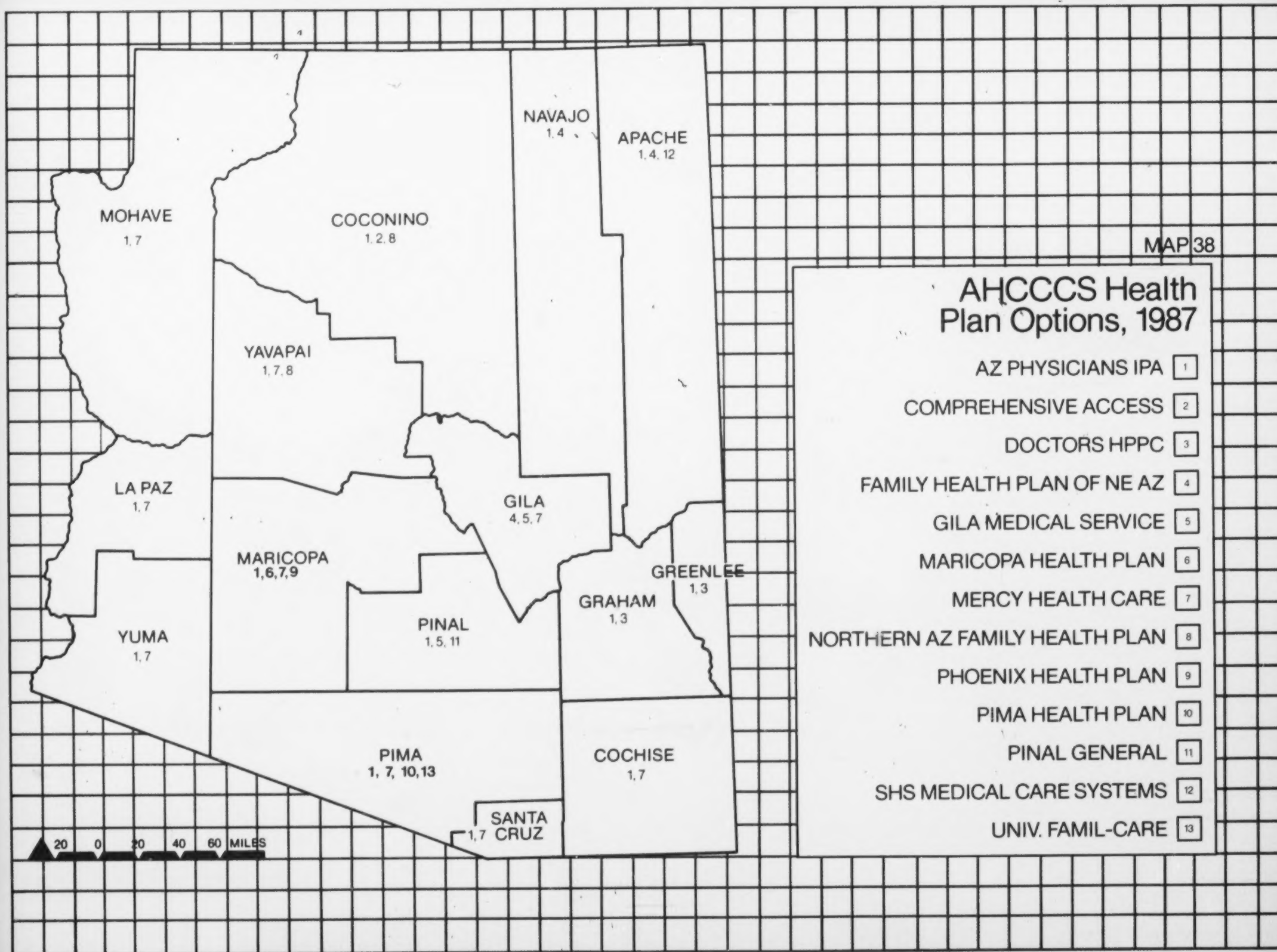
Counties Without an SMSA	Prepaid Health Plan Options ¹												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Apache	(x)	-	-	x	-	-	-	-	-	-	-	x	-
Cochise	x	-	-	-	-	-	x	-	-	-	-	-	-
Coconino	x	x	-	-	-	-	-	(x)	-	-	-	-	-
Gila	-	-	-	x	x	-	x	-	-	-	(x)	-	-
Graham	x	-	x	-	-	-	-	-	-	-	-	-	-
Greenlee	x	-	x	-	-	-	-	-	-	-	-	-	-
La Paz	x	-	-	-	-	-	x	-	-	-	-	-	-
Mohave	x	-	-	-	-	-	x	-	-	-	-	-	-
Navajo	x	-	-	x	-	-	-	-	-	-	-	-	-
Pinal	x	-	-	-	(x)	-	-	-	-	-	x	-	-
Santa Cruz	x	-	-	-	-	-	x	-	-	-	-	-	-
Yavapai	(x)	-	-	-	-	-	(x)	x	-	-	-	-	-
Yuma	x	-	-	-	-	-	x	-	-	-	-	-	-
	12	1	2	3	2	0	7	2	0	0	2	1	0
Counties With an SMSA													
Maricopa	x	-	-	-	-	x	x	-	(x)	-	-	-	-
Pima	x	-	-	-	-	-	x	-	-	x	-	-	x
	2	0	0	0	0	1	2	0	1	1	0	0	1
Arizona Total =	14	1	2	3	2	1	9	2	1	1	2	1	1

Note: An x in parentheses, (x), designates that part of the county receives service from the specified health plan option; and an x by itself designates the whole county receives service from the specified health plan option; a - designates no plan.

¹ Prepaid Health Plan Options: 1. AZ Physicians IPA; 2. Comprehensive Access; 3. Doctors H.P.P.C.; 4. Family Health Plan of N.E. Arizona; 5. Gila Medical Service; 6. Maricopa Health Plan; 7. Mercy Care Plan; 8. Northern Az Family Health Plan; 9. Phoenix Health Plan; 10. Pima Health Plan; 11. Pinal General; 12. SHS Medical Care Systems; 13. Univ. Famli-Care.

Source: Arizona Health Care Cost Containment System, Prepaid Health Plan Options list, September, 1986 with updates (All prepaid health plan options are issued as 1-year contracts with renewal options).

Physicians
(AHCCCS/Medicare)



office visit with a physician, \$5 for each non-elective surgery and \$15 for non-emergency use of an emergency room. However, an AHCCCS member who cannot pay the co-payment may not be refused service.

AHCCCS provides services to the following 3 groups: (1) the categorically eligible; (2) the Medically Needy; and (3) children under 6 years old from families with incomes between the federal poverty levels and Medically Needy levels.

People who receive state benefits as Families with Dependent Children or through Supplemental Security Income are considered to be categorical eligible members. They are automatically eligible for AHCCCS.

Counties determine who is eligible for AHCCCS as a Medically Needy member. Eligibility criteria is set by state law. The equity in the assets of someone being considered as Medically Needy may not exceed \$50,000 and annual net incomes may not exceed \$5,354 for a 4-person family. Medical bills from the previous 12 months can be subtracted from the gross income.

Children (under 6) from families with incomes between the federal poverty level and the Medically Needy level are also eligible for AHCCCS. Children in families receiving Food Stamps are automatically eligible for the program.

There is a group of people known as the Notch Group who find themselves in a no-mans land when it comes to receiving care through AHCCCS. The Notch Group is made up of people with incomes below the federal poverty level who do not qualify for participation in AHCCCS.

Approximately 64% of the Notch Group in Arizona were employed as of May of 1986, but 42% of those did not have insurance. The numbers are higher for those who are not employed (58% without insurance).⁵ This creates a serious problem because members of the Notch Group may be in poorer health than AHCCCS recipients, but see a physician less frequently.

Arizona's Notch Group promises to grow even larger unless changes are made in the AHCCCS system. Currently, the federal poverty level annual income is adjusted periodically for increases in the cost of living. Maximum annual income figures from AHCCCS are the same as they were at the program's inception. In 1985, a family of 4 was allowed to earn a maximum of \$5,354 to be part of AHCCCS while the federal poverty level was \$10,650.⁶

¹ Information provided by Jack Nock, administrative services officer, Arizona Health Care Cost Containment System, June 25, 1987.

² ARS Chapter 332, 38th Legislature, 1987.

³ Information provided by Gail Silverstein, assistant administrator, The Health Care Group, Division of the Arizona Health Care Cost Containment System, June 23, 1987.

⁴ Information provided by Kathy M. Lawless, executive assistant, Arizona Health Care Cost Containment System, June 29, 1987.

⁵ Central Arizona Health Systems Agency, *CAHSA Report and Recommendations for Health Care For the Notch Group*, May, 1986, p. i.

⁶ *CAHSA Report and Recommendations for Health Care For the Notch Group*, p. 2.

Physicians Participating in Medicare

Medicare and Medicaid are the federal government's major programs for financing health services to the poor and elderly. These two programs consume more than 90% of all federal health expenditures.

The Medicare program was established in 1965 to alleviate the burden of large medical expenses. However, less than half of the total medical expenditures incurred by the elderly are paid by Medicare.¹

Under Medicare Part A, Hospital Insurance (HI) pays for inpatient hospital care, skilled nursing facility admissions and home health services. Physician and hospital outpatient services are covered by Supplemental Medical Insurance (SMI) known as Part B. Part A and Part B are financed through separate trust

funds and different sources of revenue.

Nationally, about 30% of all physicians "accept assignment" under Medicare, which means they accept the amount paid by Medicare as full payment.² Each enrolled beneficiary who uses Part B services pays a \$75 annual deductible and a 20% co-payment on each bill. Those physicians who are not participating decide whether to accept assignment on a claim-by-claim basis.

In 1987, the percentage of the state's Doctors of Medicine (MDs) accepting assignment was 28% and the percentage of Doctors of Osteopathy (DOs) was 37%.³ In the rural areas, 33% of all MDs accept assignment, while the percentage of DOs dropped to 27%. There were no physicians accepting assignment from Medicare in Graham County and there was only 1 MD in both Greenlee and Santa Cruz Counties accepting assignment.⁴

In recent years, there has been a lot written about the financial crisis in the Medicare Hospital Trust Fund. The Hospital Trust is funded by revenues collected through employer and employee tax contributions to Social Security. However, a U.S. Congressional Budget Office report in 1984 projected the Fund would be depleted by 1994 if the system is not changed.⁵

The Federal Government, and other groups, have made

TABLE 43

AHCCCS AND MEDICARE PARTICIPATING PHYSICIANS IN ARIZONA, 1987 BY COUNTY

Counties Without an SMSA	Physicians (MD)		Physicians (DO)	
	AHCCCS	Medicare	AHCCCS	Medicare
Apache	14 (47%)*	5 (17%)†	1 (100%)*	1 (100%)†
Cochise	58 (83%)	35 (50%)	12 (75%)	2 (12%)
Coconino	84 (80%)	25 (24%)	5 (83%)	0 (0%)
Gila	27 (79%)	12 (35%)	3 (75%)	3 (75%)
Graham	10 (100%)	0 (0%)	0 (0%)	0 (0%)
Greenlee	2 (100%)	1 (50%)	1 (100%)	0 (0%)
La Paz	4 (80%)	2 (40%)	4 (57%)	2 (29%)
Mohave	59 (77%)	31 (40%)	3 (43%)	1 (14%)
Navajo	33 (85%)	4 (10%)	1 (50%)	1 (50%)
Pinal	51 (82%)	18 (29%)	6 (100%)	5 (83%)
Santa Cruz	14 (78%)	1 (5%)	0 (0%)	0 (0%)
Yavapai	90 (78%)	57 (50%)	4 (57%)	2 (29%)
Yuma	88 (85%)	30 (29%)	2 (29%)	0 (0%)
	534 (80%)	221 (33%)	42 (66%)	17 (27%)
Counties With an SMSA				
Maricopa	2,300 (64%)	866 (24%)	257 (64%)	140 (35%)
Pima	992 (68%)	544 (37%)	73 (71%)	53 (51%)
	3,292 (65%)	1,410 (28%)	330 (66%)	193 (38%)
AZ Total =	3,826 (67%)	1,631 (28%)	372 (66%)	210 (37%)

* Percent of all physicians in county participating in AHCCCS.

† Percent of all physicians in county participating in Medicare (accept Medicare payment in full for their services).

Note: 86% of the MDs and 88% of the DOs who are Medicare participants also are AHCCCS providers in the rural counties.

Source: U.S. Department of Health and Human Services, Health Care Financing Administration, *Medicare Participating Physicians/Suppliers Directory*, March, 1987; Arizona Health Care Cost Containment System (AHCCCS) Report, May, 1987 (includes disclaimer to accuracy due to the movement of providers in and out of system).

proposals for possible solutions including: increasing the minimum age for program eligibility; restructuring the benefit payments so that less is paid for each service covered; more stringent utilization reviews; and having beneficiaries and taxpayers take more responsibility for paying increasing program costs.

Inpatient utilization appears to be the crucial factor. Thus, most of the proposed reforms have addressed reductions in the payouts for hospital services.

The Medicare Prospective Payment System (PPS) is one of these reforms. Under the PPS, hospital payments are based on treatment provided to each patient. Each patient is placed into 1 of the 467 Diagnostic Related Groups (DRGs) according to diagnoses and then treated. This information is reported, along with the patient's age and discharge status, and the hospital is then paid the amount assigned to the DRG category. Any payment over the cost is retained by the hospital. Any expense over the DRG is made up by the hospital. This encourages more efficient use of resources.⁶

Use of health maintenance organizations (HMOs) and increasing co-insurance and deductible payments made by enrollees are some other approaches that are being taken to reduce the projected deficit in the Medicare Hospital Trust Fund.

¹ Central Arizona Health Systems Agency, *Health Care Financing, 1984 Health Systems Plan*, February, 1985, p. 22.

² Project Review Supplement, *Public Health Comments*, Vol. 1, No. 6, June 15, 1987, p. 2.

³ Compiled from U.S. Department of Health and Human Services, Health Care Financing Administration, *Medicare Participating Physicians/Suppliers Directory*, March, 1987.

⁴ Compiled from the *Medicare Participating Physicians/Suppliers Directory*.

⁵ Central Arizona Health Systems Agency, *Health Care Financing, 1984 Health Systems Plan*, February, 1985, p. 22.

⁶ *Health Care Financing, 1984 Health Systems Plan*, p. 22.

TABLE 44

AHCCCS AND MEDICARE PHYSICIANS IN ARIZONA, 1987 BY COMMUNITY

Counties	Physicians (MD)		Physicians (DO)	
	AHCCCS	Medicare	AHCCCS	Medicare
Apache County				
Ft. Defiance	2	0	0	0
Round Rock	0	1	0	0
Sanders	1	0	0	0
Springerville	11	4	0	0
St. Johns	0	0	1	1
Total	14	5	1	1
Cochise County				
Benson	4	1	2	0
Bisbee	4	4	2	1
Douglas	14	8	0	0
Sierra Vista	31	20	5	1
Tombstone	1	0	0	0
Willcox	4	2	3	0
Total	58	35	12	2
Coconino County				
Flagstaff	66	16	3	0
Fredonia	1	1	0	0
Page	6	1	2	0
Sedona	6	5	0	0
Tuba City	1	1	0	0
W. Sedona	2	1	0	0
Williams	2	0	0	0
Total	84	25	5	0
Gila County				
Claypool	2	7	0	0
Globe	10	2	0	0
Miami	4	1	0	0
Payson	9	1	3	3
Pine	1	0	0	0
Young	1	1	0	0
Total	27	12	3	3

Counties	Physicians (MD)		Physicians (DO)	
	AHCCCS	Medicare	AHCCCS	Medicare
Graham County				
Safford	10	0	0	0
Total	10	0	0	0
Greenlee County				
Clifton	1	0	0	0
Duncan	0	0	1	0
Morenci	1	1	0	0
Total	2	1	1	0
La Paz County				
Parker	4	2	3	2
Wenden	0	0	1	0
Total	4	2	4	2
Maricopa County				
Avondale	2	1	1	1
Buckeye	3	2	0	0
Carefree	1	0	0	0
Chandler	46	14	2	0
El Mirage	6	0	0	0
Fountain Hills	1	0	0	0
Gilbert	12	0	1	0
Glendale	86	18	17	10
Goodyear	2	2	0	0
Litchfield Park	2	1	0	0
Mesa	237	42	48	24
Paradise Valley	16	2	0	0
Peoria	39	4	0	2
Phoenix	1,430	685	159	86
Queen Creek	1	1	0	0
Scottsdale	210	48	18	12
Sun City	65	19	1	0
Surprise	0	0	1	0
Tempe	126	23	8	5
Tolleson	1	2	0	0

(continued on page 102) 101

(continued from page 101)

Counties	Physicians (MD)		Physicians (DO)	
	AHCCCS	Medicare	AHCCCS	Medicare
Youngtown	7	2	1	0
Wickenburg	7	0	0	0
Total	2,300	866	257	140

Mohave County

Bullhead City	7	18	1	0
Kingman	29	0	0	0
Lake Havasu City	17	3	1	0
Mohave Valley	1	1	0	0
Riviera	5	9	1	1
Total	59	31	3	1

Navajo County

Holbrook	5	1	0	0
Lakeside	14	0	0	0
Overgaard	4	0	1	1
Pinetop	4	0	0	0
Show Low	3	2	0	0
Snowflake	3	0	0	0
Whiteriver	1	0	0	0
Winslow	3	1	0	0
Total	33	4	1	1

Pima County

Ajo	2	1	0	0
Eloy	2	0	0	0
Green Valley	3	2	0	0
Marana	2	4	0	0
Tucson	983	537	73	53
Total	992	544	73	53

Pinal County

Apache Junction	2	0	2	1
Casa Grande	35	18	2	2
Coolidge	2	0	0	0
Florence	8	0	1	0
Hayden	1	0	0	0
Kearny	2	0	0	0
Oracle	1	0	1	2
Total	51	18	6	5

Counties	Physicians (MD)		Physicians (DO)	
	AHCCCS	Medicare	AHCCCS	Medicare
Santa Cruz County				
Nogales	14	1	0	0
Total	14	1	0	0

Yavapai County

Camp Verde	2	0	0	0
Cottonwood	22	51	1	2
Dewey	1	0	1	0
Lake Montezuma	1	0	0	0
Prescott	60	6	2	0
Prescott Valley	3	0	0	0
Yarnell	1	0	0	0
Total	90	57	4	2

Yuma County

Somerton	1	0	0	0
Wellton	1	0	0	0
Yuma	86	30	2	0
Total	88	30	2	0

Total Counties Without an SMSA	534	221	42	17
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Counties With an SMSA

Maricopa	2,300	866	257	140
Pima	992	544	73	53
	3,292	1,410	330	193

Arizona Total =	3,826	1,631	372	210
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Source: U.S. Department of Health and Human Services, Health Care Financing Administration, *Medicare Participating Physicians/Suppliers Directory*, March, 1987; Arizona Health Care Cost Containment System Report, May, 1987 (includes disclaimer to accuracy of information due to movement of providers in and out of the system).

Podiatrists in Arizona

Podiatrists examine, diagnose and treat conditions of the human foot. They may perform surgery, prescribe corrective devices, prescribe and administer drugs or perform physical therapy. Podiatrists are licensed by the Arizona State Board of Podiatry.

In 1984, there were 117 podiatrists in Arizona, with 8 in the rural counties. As of January, 1987, the number of podiatrists increased to 155 and 13 in the rural counties. Maricopa County showed the biggest increase from 78 in 1984 to 106 in 1987.¹

The ratio of podiatrists in Arizona per 100,000 population in 1984 was 4 overall and 1 in the rural areas. In 1987, the ratio remained constant overall, but increased to 2 in the rural counties.

The national ratio was 4.4 in 1983.²

Most of the growth in the actual number of providers in the rural areas occurred in counties that already had podiatrists. Yavapai County went from 1 to 3, Coconino County from 3 to 4 and Mohave County from 2 to 3. Santa Cruz County also added its first podiatrist. Apache, Gila, Graham, Greenlee, La Paz, Navajo and Pinal Counties continued to be without a podiatrist.

¹ Compiled from an Arizona State Board of Podiatry Examiners, list of podiatrists in Arizona in 1987, and *The Arizona Rural Health Provider Atlas*, 1984, p. 68.

² U.S. Department of Health and Human Services, *Health, United States*, 1985, p. 29.

TABLE 45

LICENSED PODIATRISTS IN ARIZONA, 1987 BY COUNTY

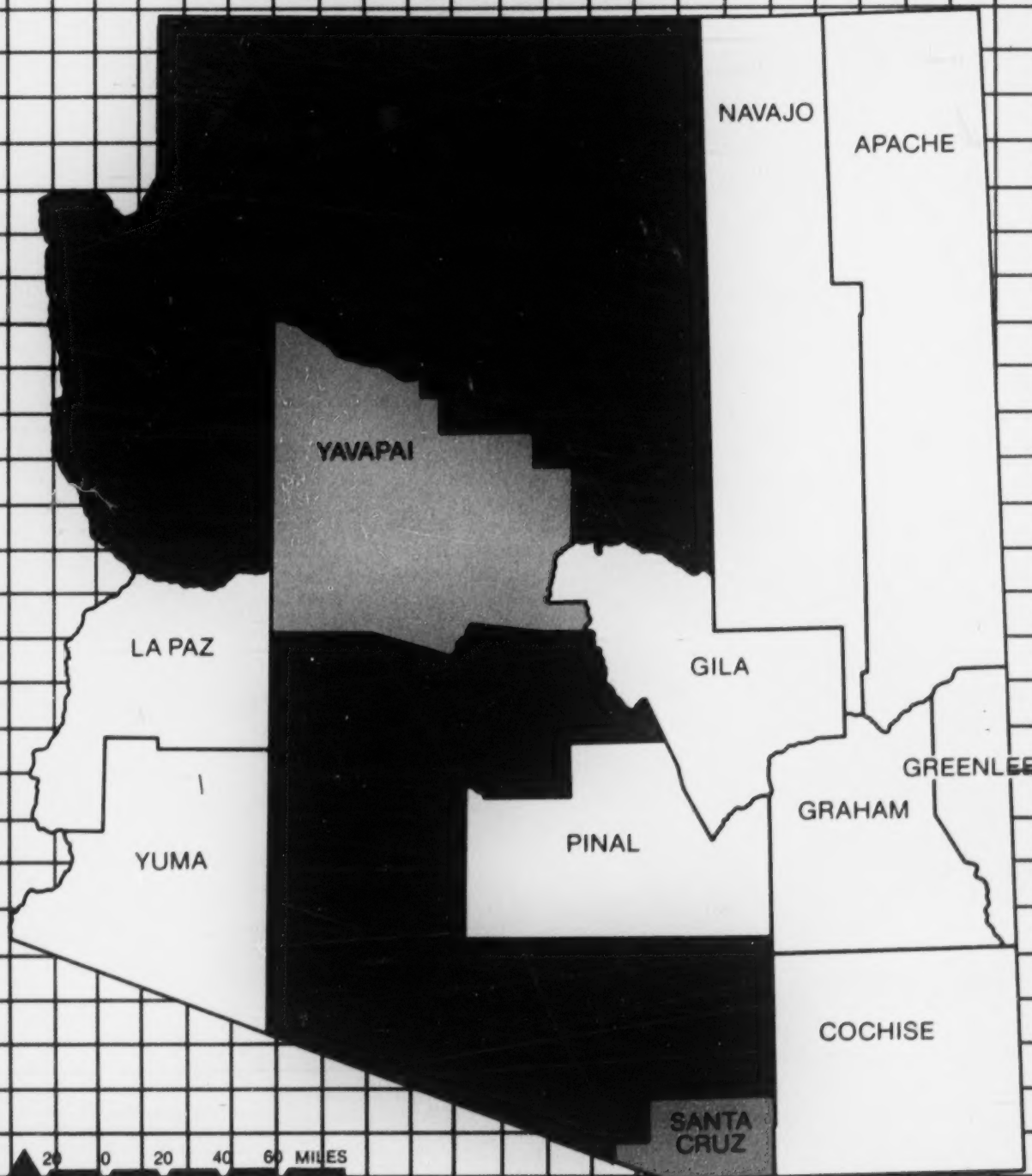
<i>Counties Without an SMSA</i>	<i>Podiatrists</i>	<i>1987 Population¹</i>	<i>Ratio²</i>
Apache	0	62,400	0
Cochise	1	100,300	1
Coconino	4	91,900	4
Gila	0	40,100	0
Graham	0	24,700	0
Greenlee	0	9,600	0
La Paz	0	14,200	0
Mohave	3	79,300	4
Navajo	0	75,700	0
Pinal	0	107,200	0
Santa Cruz	1	29,200	3
Yavapai	3	95,000	3
Yuma	1	89,500	1
	13	819,100	2
<i>Counties With an SMSA</i>			
Maricopa	106	1,990,80	5
Pima	36	659,100	5
	142	2,649,90	5
Arizona Total =	155	3,469,00	4

¹ Arizona Department of Economic Security, Population Statistics Unit, Table 1, Arizona Population Projections - Counties and Places 1986-2035, December, 1986.

² Podiatrists per 100,000 population.

Source: Arizona State Board of Podiatry Examiners, List of Podiatrists, January, 1987.

Podiatrists



MAP 39

Podiatrists

PER 100,000 POPULATION, 1987

0-1

2-3

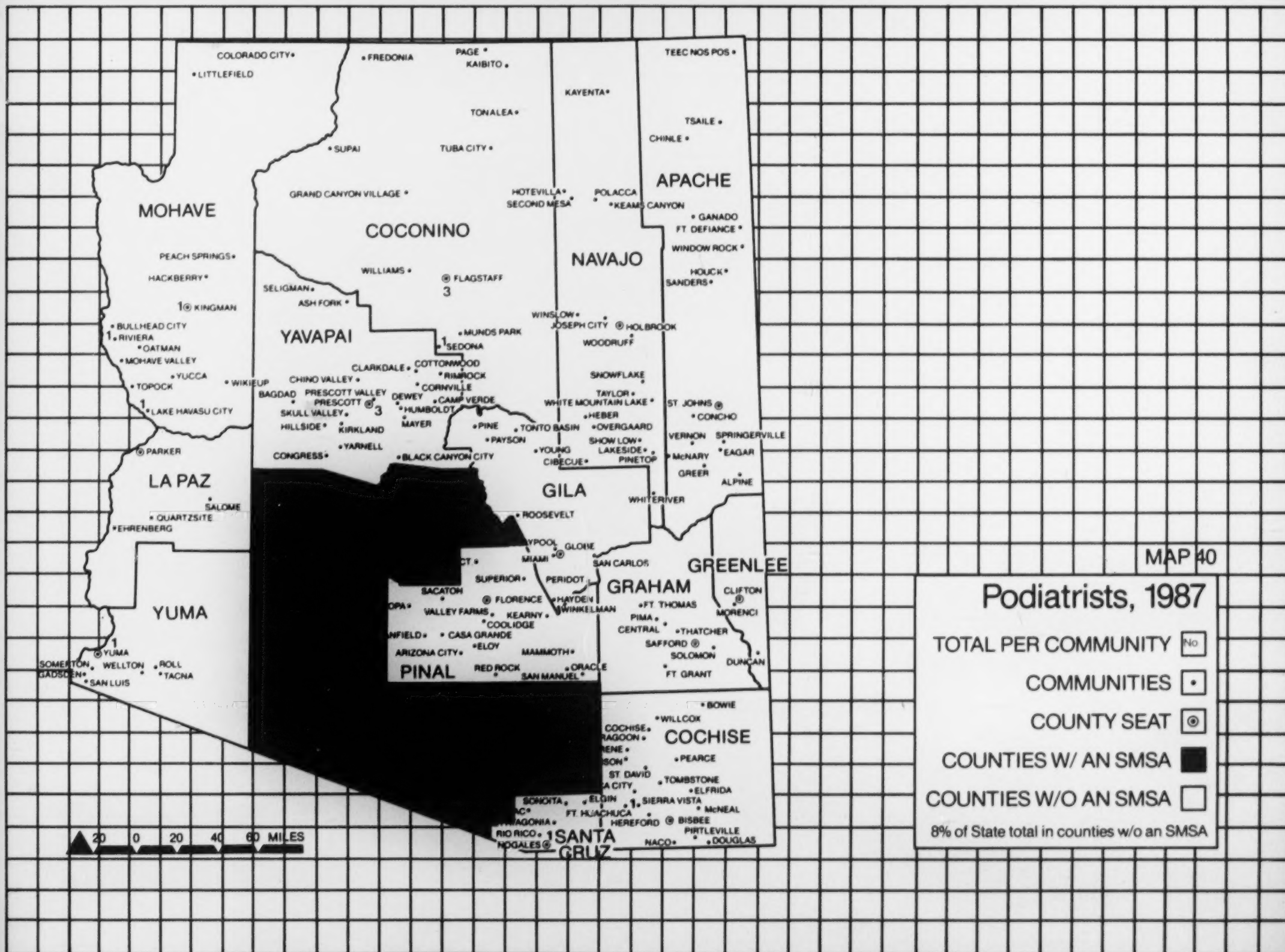
4 or more

20 0 20 40 60 MILES

TABLE 46

LICENSED PODIATRISTS IN ARIZONA, 1987 BY COMMUNITY

Apache County		Maricopa County		Pinal County		Total Counties Without an SMSA	
Total	0	Avondale	1	Total	0		13
Cochise County		Gilbert	1	Santa Cruz County		Counties With an SMSA	
Sierra Vista	1	Glendale	4	Nogales	1	Maricopa	106
Total	1	Mesa	21	Total	1	Pima	36
Coconino County		Peoria	4	Yavapai County			142
Flagstaff	3	Phoenix	47	Prescott	3	Arizona Total =	
Sedona	1	Scottsdale	16	Total	3		155
Total	4	Sun City	4	Yuma County		Source: Arizona State Board of Podiatry Examiners, List of Podiatrists, January, 1987.	
Gila County		Tempe	6	Yuma	1		
Total	0	Youngtown	2	Total	1		
Graham County		Total	106				
Total	0	Mohave County					
Greenlee County		Kingman	1				
Total	0	Lake Havasu City	1				
La Paz County		Riviera	1				
Total	0	Total	3				
		Navajo County					
		Total	0				
		Pima County					
		Tucson	36				
		Total	36				



Psychologists in Arizona

There is considerable overlap between how psychologists and other mental health professionals treat patients. A major distinguishing mark of a psychologist is the ability to interpret psychological tests.

A psychologist is required to have a Ph.D. and pass a national examination to become licensed to practice in Arizona. The licenses do not state a particular field, but psychologists are required to practice within their areas of expertise. Counselors and sex therapists are not licensed through the Arizona State Board of Psychologist Examiners.

The number of licensed psychologists in Arizona increased from 93 in 1963 to 800 in 1987.¹ Of the state's psychologists, 719 were in the urban counties and 81 were in the rural counties. The overall state ratio was 23 and in the rural counties it was 10. Yavapai County (with a ratio of 33) was the only rural county to reach the state ratio.² Yavapai County also topped the 1987 national ratio of 28.³

Clinical psychology has been one of the fastest growing areas of psychological study in the nation. It's not uncommon for 200 to 500 students to compete for a handful of openings in graduate programs at a university or college each year. About 315 applicants a year compete for the 5 or 6 openings in the graduate program at Arizona State University.⁴

A recent state law passed by the Legislature provides direct reimbursement to psychologists for services they provide under disability contracts or blanket insurance contracts. This will provide for a more rapid payment for services rendered.⁵

¹ Figures provided by Peggy Lavoy, executive director of the Arizona State Board of Psychologist Examiners.

² Compiled from Arizona State Board of Psychologist Examiners, mailing list, May 22, 1987.

³ Provided by the Arizona State of Psychologist Examiners, July 30, 1987.

⁴ Figures provided by the Psychology Advisement Office at Arizona State University, June 2, 1987.

⁵ ARS Chapter 20, Sections 827, 830, 841, 841.02, 1376, 1376.02, 1406, 1406.02, 38th Legislature, 1987.

TABLE 47

LICENSED PSYCHOLOGISTS IN ARIZONA, 1987 BY COUNTY

<i>Counties Without an SMSA</i>	<i>Psychologists</i>	<i>1987 Population¹</i>	<i>Ratio²</i>
Apache	1	62,400	2
Cochise	9	100,300	9
Coconino	30	91,900	33
Gila	3	40,100	7
Graham	1	24,700	4
Greenlee	0	9,600	0
La Paz	1	14,200	7
Mohave	4	79,300	5
Navajo	2	75,700	3
Pinal	5	107,200	5
Santa Cruz	0	29,200	0
Yavapai	16	95,000	17
Yuma	9	89,500	10
	81	819,100	10

<i>Counties With an SMSA</i>			
Maricopa	491	1,990,800	25
Pima	228	659,100	35
	719	2,649,900	27

Arizona Total =	800	3,469,000	23
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¹ Arizona Department of Economic Security, Population Statistics Unit, Table 1, Arizona Population Projections - Counties and Places 1986-2035, December, 1986.

² Psychologists per 100,000 population.

Source: Arizona State Board of Psychologists Examiners, Psychologists mailing list, 1987.

Psychologists

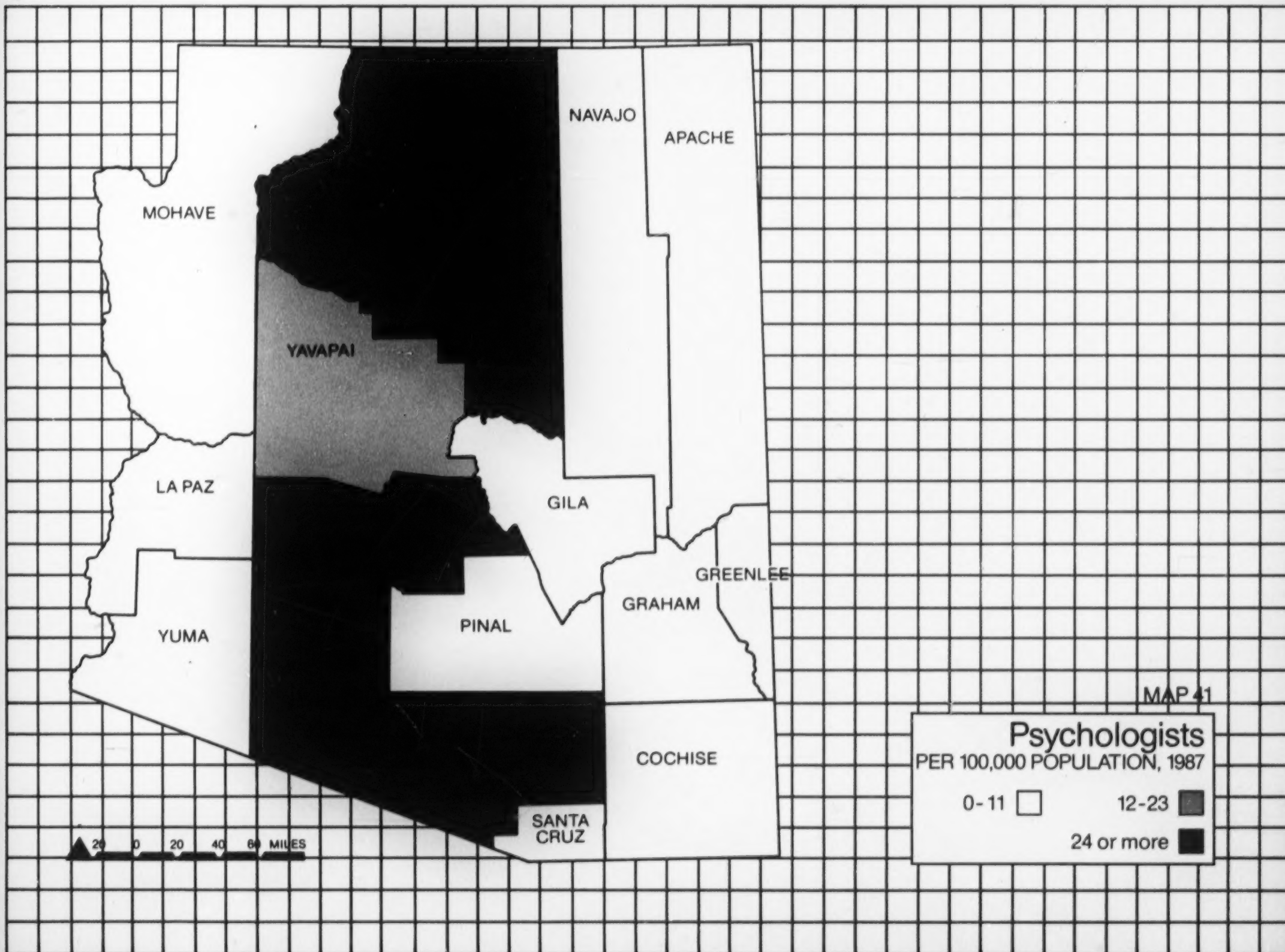
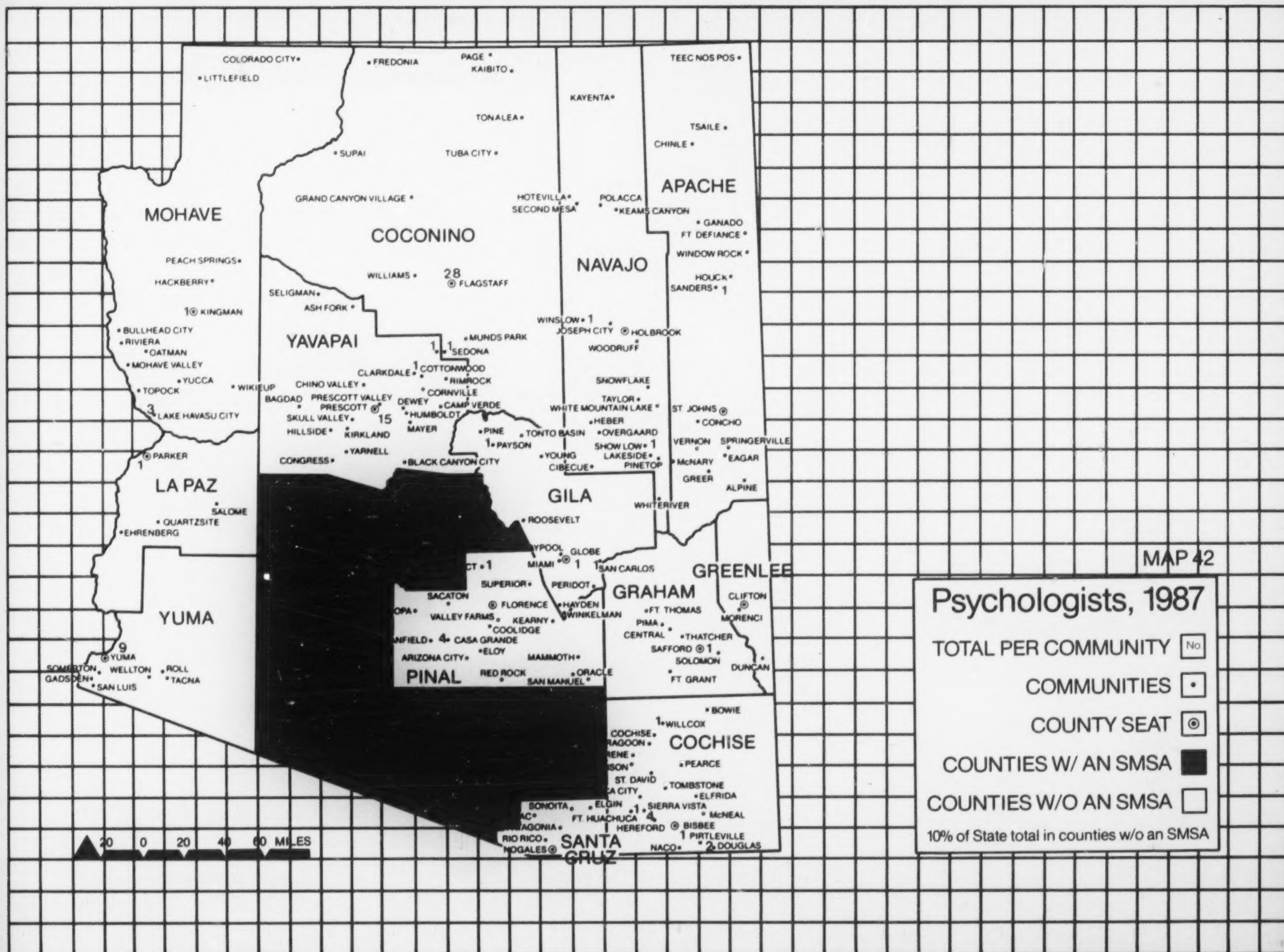


TABLE 48

LICENSED PSYCHOLOGISTS IN ARIZONA, 1987 BY COMMUNITY

Apache County		Greenlee County		Navajo County		Total Counties Without an SMSA	81
Sanders	1	Total	0	Show Low	1		
Total	1			Winslow	1	Counties With an SMSA	
		La Paz County		Total	2	Maricopa	491
Cochise County		Parker	1			Pima	228
Bisbee	1	Total	1	Pima County			719
Douglas	2			Oro Valley	1		
Fort Huachuca	1	Maricopa County		Tucson	227		
Sierra Vista	4	Carefree	2	Total	228	Arizona Total =	800
Willcox	1	Cave Creek	1				
Total	9	Chandler	11	Pinal County			
		Glendale	14	Apache Junction	1		
Coconino County		Goodyear	1	Casa Grande	4		
Flagstaff	28	Laveen	1	Total	5		
Sedona	1	Mesa	36				
West Sedona	1	Paradise Valley	3	Santa Cruz County			
Total	30	Peoria	4	Total	0		
		Phoenix	220				
Gila County		Scottsdale	84	Yavapai County			
Globe	1	Sun City	3	Clarkdale	1		
Payson	1	Sun City West	2	Prescott	15		
San Carlos	1	Sun Lakes	2	Total	16		
Total	3	Tempe	106				
		Wickenburg	1	Yuma County			
Graham County		Total	491	Yuma	9		
Safford	1	Mohave County		Total	9		
Total	1	Kingman	1				
		Lake Havasu City	3				
		Total	4				

Source: Arizona State Board of Psychologist Examiners, Psychologists mailing list, 1987.



Radiologic Technologists in Arizona

The Arizona Medical Radiologic Technology Board of Examiners certifies the following 3 types of radiologic technologists: radiographers (CRTs); radiation therapy technologists (CTTs); and practical technologists in radiology (CPT-L and CPT-U).¹

Radiographers (CRTs) are the most diverse of the group, performing a variety of services ranging from taking chest X-rays in doctors' offices, hospitals and outpatient clinics to working in specialized mobile units for emergency and surgical sites.

Radiographers need to complete a 2-year studies program in radiology to be certified in Arizona. There are currently 1,903 radiographers in Arizona, with 277 of them in the rural counties. Radiographers outnumber the other radiology practitioners within Arizona 4-to-1.

The overall state ratio of radiographers was 55 and 34 in the rural counties. The national ratio was 65 in 1987.²

Radiation Therapy Technologists (CTTs) are the most specialized group. There are only 48 certified in the state and they are all located in Maricopa and Pima Counties.

Radiation Therapy Technologists administer therapeutic
(continued on page 115)

TABLE 49

CERTIFIED RADIOLOGIC TECHNOLOGISTS IN ARIZONA, 1987 BY COUNTY

<i>Counties Without an SMSA</i>	<i>CRT³</i>	<i>Radiologic Technologists</i>		<i>CTT⁶</i>	<i>1987 Population¹</i>	<i>Ratio²</i>
		<i>CPT(L)⁴</i>	<i>CPT(U)⁵</i>			
Apache	10	1	0	0	62,400	16
Cochise	35	3	7	0	100,300	35
Coconino	39	2	2	0	91,900	42
Gila	16	4	4	0	40,100	40
Graham	8	2	3	0	24,700	32
Greenlee	0	0	0	0	9,600	0
La Paz	7	2	1	0	14,200	49
Mohave	46	4	6	0	79,300	58
Navajo	10	4	9	0	75,700	13
Pinal	24	13	5	0	107,200	22
Santa Cruz	7	1	0	0	29,200	24
Yavapai	40	4	9	0	95,000	42
Yuma	35	2	4	0	89,500	39
	<u>277</u>	<u>42</u>	<u>50</u>	<u>0</u>	<u>819,100</u>	<u>34</u>
<i>Counties With an SMSA</i>						
Maricopa	1,198	237	109	27	1,990,80	60
Pima	428	40	11	21	659,10	65
	<u>1,626</u>	<u>277</u>	<u>120</u>	<u>48</u>	<u>2,649,90</u>	<u>61</u>
<i>Arizona Total =</i>	<i>1,903</i>	<i>319</i>	<i>170</i>	<i>48</i>	<i>3,469,000</i>	<i>55</i>

¹ Arizona Department of Economic Security, Population Statistics Unit, Table 1, Arizona Population Projections - Counties and Places 1986-2035, December, 1986.

² Radiographers (CRTs) per 100,000 population.

³ Radiographers.

⁴ Practical Technologists (Limited), they meet educational requirements set after 1977.

⁵ Practical Technologists (Unlimited), were working in the field prior to 1977 and do not have to meet current educational requirements.

⁶ Radiation Therapy Technologists.

Source: Arizona Medical Radiologic Technology Board of Examiners, Radiologic Technologists mailing list, 1987.

Radiologic Technologists

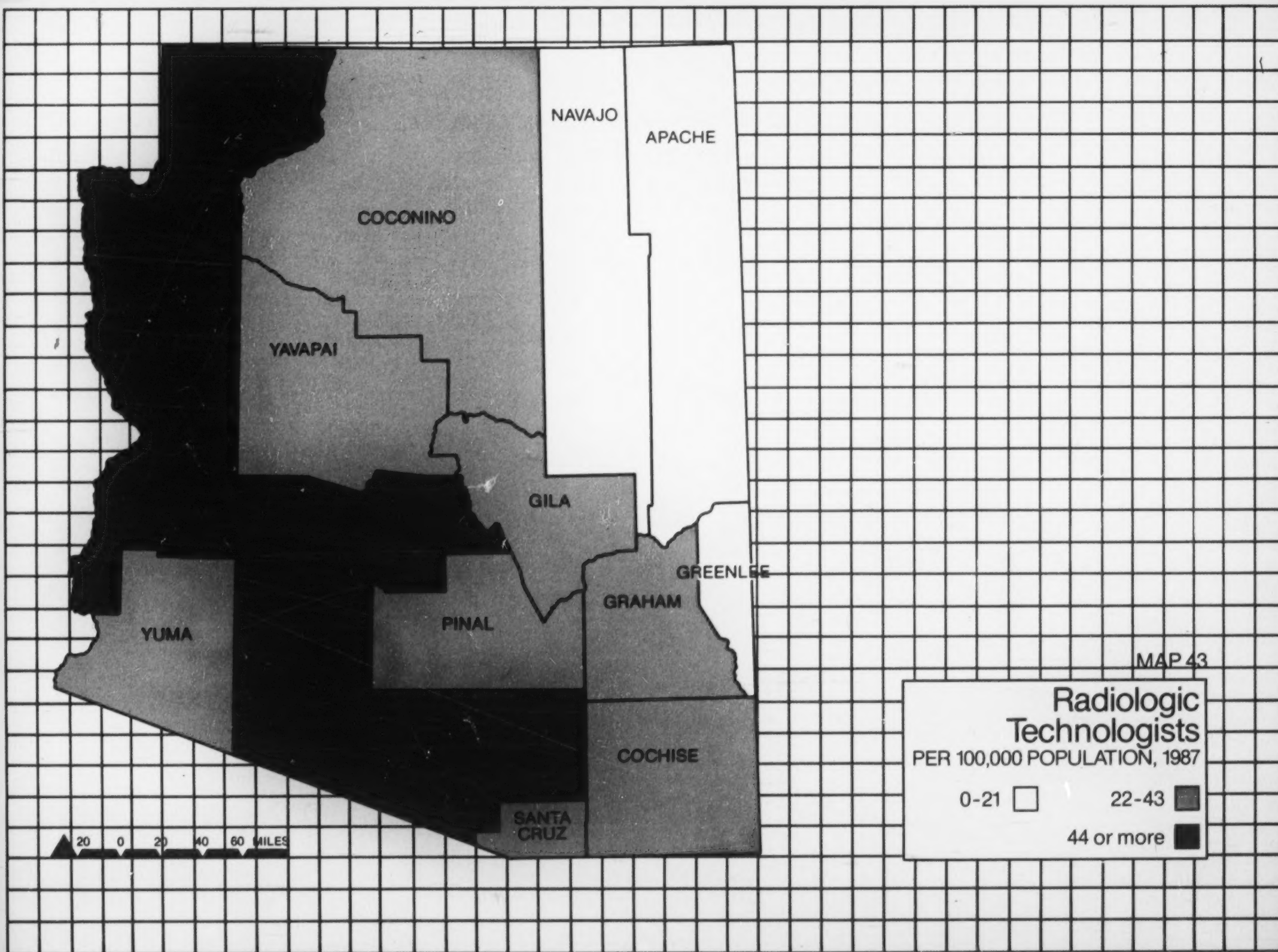


TABLE 50

CERTIFIED RADIOLOGIC TECHNOLOGISTS IN ARIZONA, 1987 BY COMMUNITY

	CRT ¹	CPT(L) ²	CPT(U) ³	CTT ⁴		CRT ¹	CPT(L) ²	CPT(U) ³	CTT ⁴
Apache County					Gila County				
Chinle	1	0	0	0	Claypool	2	0	0	0
Ganado	3	0	0	0	Globe	6	1	1	0
Many Farms	1	0	0	0	Hayden	1	1	2	0
Sanders	1	0	0	0	Miami	1	1	1	0
Springerville	4	0	0	0	Payson	6	0	0	0
St. Johns	0	1	0	0	Pine	0	1	0	0
Total	10	1	0	0	Total	16	4	4	0
Cochise County					Graham County				
Benson	0	1	0	0	Pima	2	0	0	0
Bisbee	4	1	3	0	Safford	4	2	3	0
Bowie	0	0	1	0	Thatcher	2	0	0	0
Douglas	7	0	0	0	Total	8	2	3	0
Elfrida	1	0	0	0	Greenlee County				
Ft. Huachuca	4	0	0	0	Total	0	0	0	0
Hereford	2	0	1	0	La Paz County				
Huachuca City	0	0	1	0	Parker	6	2	1	0
Sierra Vista	12	1	1	0	Quartzsite	1	0	0	0
St. David	2	0	0	0	Total	7	2	1	0
Willcox	3	0	0	0	Maricopa County				
Total	35	3	7	0	Avondale	1	0	0	0
Coconino County					Buckeye	2	2	2	0
Flagstaff	28	1	0	0	Carefree	2	0	0	0
Grand Canyon	0	1	0	0	Cashion	1	0	0	0
Munds Park	1	0	0	0	Cave Creek	3	0	0	0
Page	4	0	1	0	Chandler	59	4	2	0
Park	1	0	0	0	Fountain Hills	4	0	0	0
Sedona	5	0	0	0					
Williams	0	0	1	0					
Total	39	2	2	0					

(continued on page 114)

(continued from page 113)

	CRT ¹	CPT(L) ²	CPT(U) ³	CTT ⁴
Gilbert	11	0	0	0
Glendale	121	28	14	5
Goodyear	3	0	0	0
Laveen	0	2	0	0
Litchfield Park	3	0	0	0
Mesa	151	28	9	10
Paradise Valley	1	0	0	0
Peoria	25	5	2	1
Phoenix	561	131	63	8
Scottsdale	135	19	11	2
Sun City	14	2	0	0
Sun Lakes	1	1	0	0
Surprise	0	1	0	0
Tempe	90	14	5	1
Tolleson	4	0	1	0
Waddell	2	0	0	0
Wickenburg	4	0	0	0
Total	1,198	237	109	27

Mohave County

Bullhead City	5	0	0	0
Chloride	1	1	0	0
Kingman	13	0	2	0
Lake Havasu City	19	3	2	0
Mohave Valley	3	0	1	0
Riviera	5	0	1	0
Total	46	4	6	0

Navajo County

Holbrook	1	1	2	0
Lakeside	2	0	0	0
Show Low	5	2	3	0
Snowflake	0	0	2	0
Whiteriver	0	0	1	0
Winslow	2	1	1	0
Total	10	4	9	0

	CRT ¹	CPT(L) ²	CPT(U) ³	CTT ⁴
Pima County				
Green Valley	2	1	0	0
Marana	3	0	0	0
Tucson	422	39	11	21
Vail	1	0	0	0
Total	428	40	11	21

Pinal County

Apache Junction	2	4	1	0
Arizona City	2	1	0	0
Casa Grande	16	1	2	0
Coolidge	0	1	0	0
Eloy	0	1	0	0
Florence	2	1	0	0
Kearny	1	2	1	0
Sacaton	0	1	0	0
Superior	1	1	1	0
Total	24	13	5	0

Santa Cruz County

Elgin	1	0	0	0
Nogales	6	1	0	0
Total	7	1	0	0

Yavapai County

Bagdad	1	0	4	0
Camp Verde	0	1	0	0
Chino Valley	3	0	0	0
Cottonwood	12	0	0	0
Humboldt	0	1	0	0
Mayer	1	0	0	0
Prescott	19	1	4	0
Prescott Valley	4	1	0	0
Skull Valley	0	0	1	0
Total	40	4	9	0

(continued from page 111)

	CRT ¹	CPT(L) ²	CPT(U) ³	CTT ⁴
Yuma County				
Roll	0	1	0	0
Somerton	1	1	1	0
Yuma	34	0	3	0
Total	35	2	4	0
Total Counties				
Without an SMSA	277	42	50	0
Counties With an SMSA				
Maricopa	1,198	237	109	27
Pima	428	40	11	21
	1,626	277	120	48
Arizona Total =	1,903	319	170	48

¹ Radiographers.

² Practical Technologists (Limited), they meet education requirements established after 1977.

³ Practical Technologists (Unlimited), were working in the field prior to 1977 and do not have to meet current educational requirements.

⁴ Radiation Therapy Technologists.

Source: Arizona Medical Radiologic Technology Board of Examiners, Radiologic Technologists mailing list, 1987.

doses of radiation prescribed by the physician for the treatment of disease. They need to complete a 2-year studies program and then take a third year of specialized study in the field. Nuclear Medicine Technologists also come under this heading. They study the body organs and/or laboratory analysis to assist the physician in diagnosing diseases or injuries.

Limited and Unlimited Practical Technologists (CPT-L and CPT-U) are limited to taking X-rays of the chest and extremities.

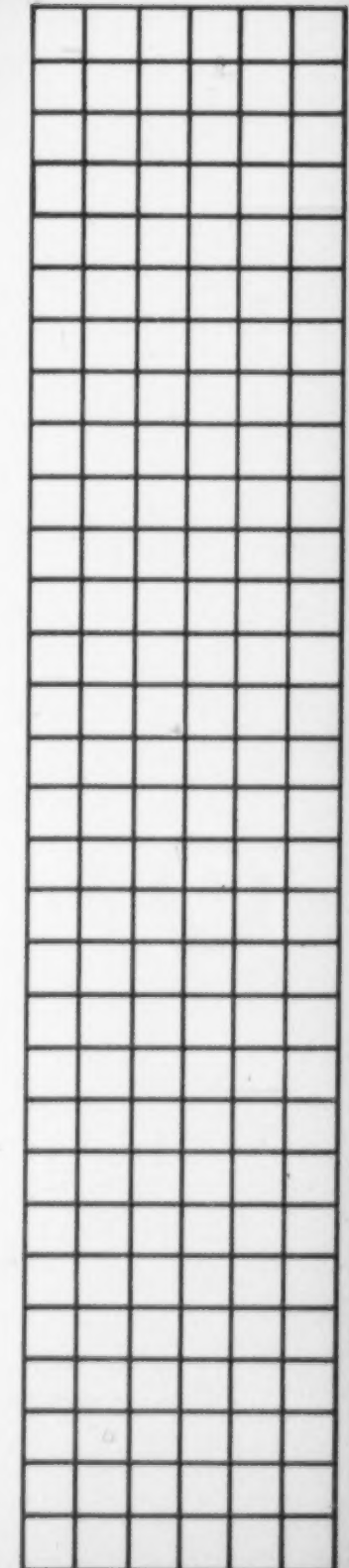
Certification to be a CPT-L requires 9 months of study in Arizona. Unlimited Practical Technologists (those who were in the field before 1977) do not have to meet these educational standards, but they have to pass the state certification test.

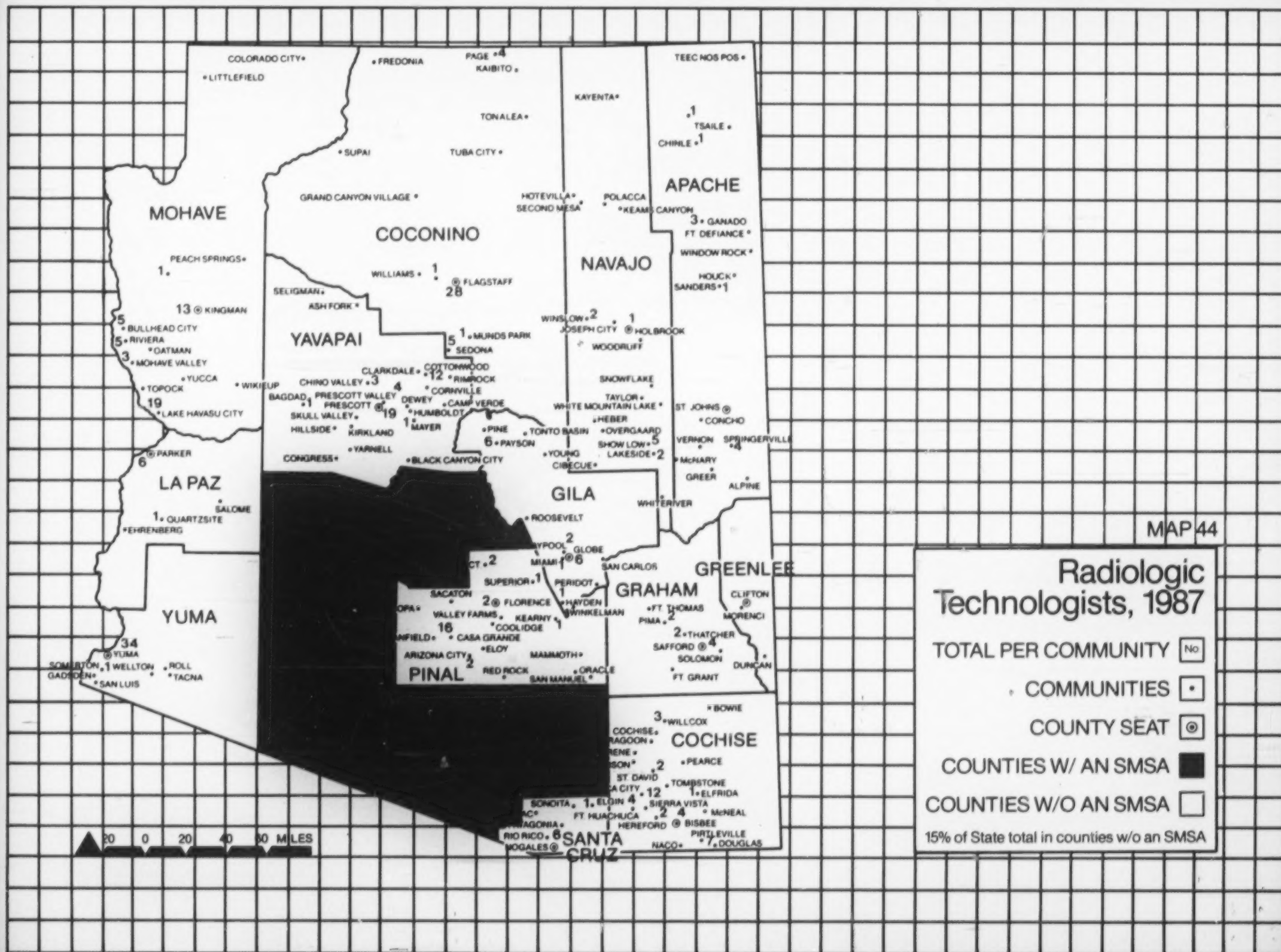
There are 489 limited and unlimited practical technologists in Arizona, with 92 of them in the rural counties.

Every county has at least 8 practitioners from the combined categories, except for Greenlee County which is without any radiologic practitioners.

¹ Information provided by John Gray, program manager, the Arizona Medical Radiologic Technology Board of Examiners, May, 1987.

² Information provided by the Arizona Medical Radiologic Technology Board of Examiners, July 31, 1987.





**Health Care
Services/Facilities**

Behavioral Health Services

Mental illness is easily the greatest social and health problem in the United States. One out of every 5 adults suffers from a diagnosable mental disorder.¹ One out of 10 children under the age of 18 has 1 or more significant mental health problems.² No clear line neatly divides the mentally healthy from the seriously disturbed. Many people have short-term psychological symptoms serious enough to affect their lives.

Arizona ranked 50th nationally in 1985 in the amount of per capita spending for mental health services. In an effort to offset that trend, the State Legislature appropriated \$4 million for 5 pilot projects for the chronically mentally ill. The projects were scheduled to begin July 1, 1987.³ The projects will be evaluated after 3 years and if successful, they could be the first step in a comprehensive state mental health care plan for the chronically mentally ill.⁴

The \$4 million appropriation for the project is double the normal outlay for mental health services for the most seriously disturbed in the state. Unfortunately, there is no funding for projects for those who are not chronically mentally ill, but need help. Programs operating now will be forced to attempt to meet increasing needs without the benefit of further resources.⁵

TABLE 51

BEHAVIORAL HEALTH SERVICES IN ARIZONA, 1987 BY COUNTY

Counties Without an SMSA	Number of Facilities	Service Type			Contract Service Category					
		Outpatient	Partial Care	Residential	Alcohol	Drug Abuse	Mental Health	CMI	Domestic Violence	Children's Residential
Apache	3	3	3	1	3	3	3	3	0	0
Cochise	9	8	3	1	8	8	8	2	0	1
Coconino	6	3	1	2	4	4	4	5	1	1
Gila	5	3	0	3	2	2	2	1	2	0
Graham	2	1	1	1	2	2	2	2	1	0
Greenlee	2	2	0	1	2	2	2	1	0	0
La Paz	3	2	0	1	3	3	1	0	0	0
Mohave	6	5	3	1	5	5	6	6	3	0
Navajo	6	5	3	1	6	6	6	6	2	0
Pinal	21	15	5	6	15	15	17	11	3	0
Santa Cruz	3	3	1	1	3	3	3	2	0	0
Yavapai	6	4	2	1	4	4	6	6	3	0
Yuma	7	2	1	4	2	2	2	4	1	0
	79	56	23	24	59	59	62	49	16	2
Counties With an SMSA										
Maricopa	151	95	22	39	70	61	68	53	5	2
Pima	29	13	5	11	15	14	8	10	3	0
	180	108	27	50	85	75	76	63	8	2
Arizona Total =	259	164	50	74	144	134	138	112	24	4

Source: Arizona Department of Health Services, Office of Community Behavioral Services, Behavioral Health Contractors and Subcontractors list, October, 1986.

In 1986, there were 259 contractors and subcontractors providing behavioral health care in Arizona (79 of those in the rural counties), according to the Arizona Department of Health Services.⁶ All 15 counties offer services for people seeking mental health help and alcohol and drug abuse counseling. Care for victims of domestic violence is available in all but Apache, Cochise, Greenlee, La Paz and Santa Cruz Counties. The services mentioned can be obtained as an outpatient or through partial or residential care.

Graham and Greenlee Counties each have only 2 facilities and Apache, La Paz and Santa Cruz Counties only 3 each, but all 5 counties offer the

types of care mentioned, except domestic violence. La Paz County also is without providers for the chronically mentally ill.

Behavioral health abuse of alcohol or drugs is a major problem area affecting Arizonans. An estimated 58,000 adult Arizonans had a serious drug problem in 1986.⁷ Intravenous drug use has increased the risk of crime and infectious diseases such as AIDS and Hepatitis B.⁸ Statistics from 1985 showed that 54% of all fatal accidents in the state involved alcohol or drugs.⁹

The number of Arizona hospitals with chemical dependency programs has increased sixfold from 1980 to 1986 with several other programs undergoing major expansions.¹⁰ The chemical dependency program at St. Luke's Health System went from 30 beds in 1980 to the state's largest with 260 in the May of 1987. The increase in the availability of care has come in response to the rising need for chemical dependency programs, but low operating costs and high profits have also played a role in the rapid development of hospital-based programs.

Chemical dependency units and other types of behavioral health services are big money-makers, in part, because Medicare hasn't placed ceilings on what hospitals can charge for chemical dependency treatment or other types of behavioral health services.

¹ Alcohol, Drug Abuse and Mental Health Administration, *ADAMHA Update: Prevalence of the Mental Illness*, No. 4, July, 1986.

² Costello, Primary Care Pediatrics and Child Psychology: A Review of Diagnostic, Treatment and Referral Practices, *Pediatrics*, 78, 1986, pp. 1044-1051.

³ ARS Chapter 223, 38th Legislature, 1987.

⁴ Interview with Cheryl Fanning, health planning consultant with the Arizona Department of Health Services (ADHS), Division of Behavioral Health Services Office of Planning and Evaluation, June 13, 1987.

⁵ Cheryl Fanning.

⁶ ADHS, Office of Community Behavioral Services, Behavioral Health Contractors and Subcontractors List, 1986.

⁷ ADHS, Drug Abuse Issue Paper, May, 1987.

⁸ Kozel and Adams, Epidemiology of Drug Abuse: An Overview, *Science*, 1986, 234, pp. 970-974.

⁹ The Phoenix Police Department Planning and Research Bureau, The 1985 Annual Report.

¹⁰ Helliker, The Eroding Pillar of Hospital Profits, *Arizona Trend*, May, 1987, p 37.

TABLE 52

BEHAVIORAL HEALTH SERVICES, BY COMMUNITY 1987

	Service Type				Contract Service Category					
	Number of Facilities	Outpatient	Partial Care	Residential	Alcohol	Drug Abuse	Mental Health	CMI	Domestic Violence	Children's Residential
Apache County										
Little Colorado Behavioral Health Centers										
Springerville (14)*	x	x	-	x	x	x	x	-	-	
St. Johns (14)	x	x	-	x	x	x	x	-	-	
The Navajo Tribe	x	x	x	x	x	x	x	-	-	
Window Rock (13)										
Total	3	3	3	1	3	3	3	3	0	0
Cochise County										
Southeastern Behavioral Health Services										
Bisbee (17)	x	-	-	x	x	x	-	-	-	
Benson (17)	x	-	-	x	x	x	-	-	-	
Douglas (17)	x	x	-	x	x	x	x	-	-	
Hereford (17)	x	-	-	x	x	x	-	-	-	
Sierra Vista (17)	-	-	-	-	-	-	-	-	x	
Sierra Vista (17)	x	x	-	x	x	x	x	-	-	
Sierra Vista (17)	x	x	-	x	x	x	-	-	-	
Willcox (17)	x	-	-	x	x	x	-	-	-	
Willcox (17)	x	-	x	x	x	x	-	-	-	
Total	9	8	3	1	8	8	8	2	0	1
Coconino County										
Coconino Community Guidance Center										
Flagstaff (14)	x	-	-	x	x	x	x	-	-	
Flagstaff (14)	-	-	-	x	x	x	x	-	-	
Flagstaff (14)	-	x	x	x	x	x	x	-	-	
Flagstaff (14)	-	-	x	-	-	-	x	-	-	
Page (14)	x	-	-	-	-	-	-	-	x	
Page (14)	x	-	-	x	x	x	x	x	-	
Total	6	3	1	2	4	4	4	5	1	1
Gila County										
Gila County Guidance Clinic Globe (10)	x	-	-	-	-	x	-	-	-	
La Questa Alcohol & Drug Treatment Center	x	-	x	x	x	-	-	-	-	
Globe (12)										
The Caring Place Shelter	-	-	x	-	-	-	-	-	x	
Globe (4)										
The Caring Place, Inc. Miami (4)	-	-	x	-	-	-	-	-	x	
Rim Guidance Center, Inc. Payson (15)	x	-	-	x	x	x	x	-	-	
Total	5	3	0	3	2	2	2	1	2	0
Graham County										
Safford (17)	x	-	-	x	x	x	x	x	-	
Casa de Esperanza Safford (17)	-	x	x	x	x	x	x	-	-	
Total	2	1	1	1	2	2	2	2	1	0
Greenlee County										
Clifton (17)	x	-	-	x	x	x	x	-	-	
Frisco House Clifton (17)	x	-	x	x	x	x	-	-	-	
Total	2	2	0	1	2	2	2	1	0	0
La Paz County										
Life Health Center Parker (3)	x	-	-	x	x	x	-	-	-	
Colorado River Indian Tribes (CRIT) Behavioral Health Service Center	x	-	-	x	x	-	-	-	-	
Parker (6)										
CRIT Recovery Center Parker (6)	-	-	x	x	x	-	-	-	-	
Total	3	2	0	1	3	3	1	0	0	0

Total	151	95	22	39	70	61	68	53	5	2
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Mohave Mental Health Clinic										
Kingman (14)	-	x	-	-	-	x	x	-	-	
Kingman (14)	x	-	-	x	x	x	x	x	-	
Kingman (14)	x	-	x	x	x	x	x	-	-	
Lake Havasu City (14)	x	x	-	x	x	x	x	-	-	
Lake Havasu City (14)	x	-	-	x	x	x	x	x	-	
Riviera (14)	x	x	-	x	x	x	x	x	-	
Total	6	5	3	1	5	5	6	6	3	0

	1	2	3	4	5	6	7	8	9	10
Apache Tribal Guidance Clinic	X	-	-		X	X	X	X	-	-
Whiteriver (14)										
Community Counseling Centers										
Holbrook (14)	X	X	-		X	X	X	X	-	-
Show Low (14)	X	-	-		X	X	X	X	X	-
Show Low (14)	X	X	-		X	X	X	X	X	-
Winslow (14)	-	X	X		X	X	X	X	-	-
Winslow (14)	X	-	-		X	X	X	X	-	-
Total	6	5	3	1	6	6	6	6	2	0

Total	29	13	5	11	15	14	8	10	3	0
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[illegible]

CMI Group Home	-	x	x	-	-	x	x	-	-
Casa Grande (2)									
Coolidge Elderly Day Treatment	-	x	-	-	-	-	x	-	-
Coolidge (2)									
Coolidge Outpatient	x	-	-	x	x	x	-	-	-
Coolidge (2)									
Copper Basin Behavioral Health System	x	-	-	x	x	x	x	-	-
Kearny (7)									
Elderly Group Home	-	-	x	-	-	-	x	-	-
Casa Grande (2)									
Eloy Outpatient	x	-	-	x	x	x	-	-	-
Eloy (2)									
Gila River Indian Community	x	x	-	-	-	x	x	-	-
Sacaton (11)									
Mental Health Crisis Stabilization	-	-	x	-	-	-	x	-	-
Casa Grande (2)									
Pinal County Jail	x	-	x	x	x	x	-	-	-
Florence (2)									
Pinal General Hospital	x	-	-	x	x	x	x	-	-
Casa Grande (2)									
Santa Cruz Valley High School	x	-	-	x	x	x	-	-	-
Eloy (2)									
Signal Peak Senior Resident Group Home	-	-	x	x	x	x	-	-	-
Coolidge (2)									
Stanfield Community Center	x	-	-	x	x	x	-	-	-
Stanfield (2)									
Superstition Mountain Mental Health Center, Inc.	x	x	-	x	x	x	x	-	-
Apache Junction (2)									
Tri-Community Counseling Services									
Mammoth (18)	x	-	-	x	x	x	x	x	-
Oracle (18)	x	-	-	x	x	x	x	x	-
Total	21	15	5	6	15	15	17	11	3
		0							

(continued on page 122)

(continued from page 121)

	Service Type			Contract Service Category						
	Number of Facilities	Outpatient	Partial Care	Residential	Alcohol	Drug Abuse	Mental Health	CMI	Domestic Violence	Children's Residential
Santa Cruz County										
Nogales (17)	x	x	-	x	x	x	x	-	-	-
Nogales (17)	x	-	-	x	x	x	x	-	-	-
Fast J Ranch	x	-	x	x	x	x	-	-	-	-
Nogales (17)										
Total	3	3	1	1	3	3	3	2	0	0
Yavapai County										
West Yavapai										
Guidance Clinic										
Prescott (14)	x	-	-	x	x	x	x	-	-	-
Prescott (14)	-	x	x	-	-	x	x	-	-	-
Verde Valley Community										
Guidance Clinic										
Camp Verde (14)	x	-	-	x	x	x	x	x	-	-
Cottonwood (14)	x	-	-	x	x	x	x	x	-	-
Cottonwood (14)	-	x	-	-	-	x	x	-	-	-
Sedona (14)	x	-	-	x	x	x	x	x	-	-
Total	6	4	2	1	4	4	6	6	3	0
Yuma County										
Behavioral Health										
Services, Inc.	x	-	-	x	x	x	x	-	-	-
Yuma (3)										
Catholic Community	x	-	-	-	-	x	-	-	-	-
Services										
Yuma (3)										
Community Support	-	x	x	-	-	-	x	-	-	-
Services										
Yuma (3)										
LARC	-	-	x	x	x	-	-	-	-	-
Yuma (3)										
Oasis Board and Care	-	-	x	-	-	-	x	-	-	-
Yuma (3)										
Rio Colorado Someridge	-	-	x	-	-	-	x	-	-	-
Yuma (3)										
Safehouse	-	-	-	-	-	-	-	x	-	-
Yuma (3)										
Total	7	2	1	4	2	2	2	4	1	0

Counties Without an SMSA

79 56 23 24 59 59 62 49 16 2

Counties With an SMSA

Maricopa 151 95 22 39 70 61 68 53 5 2

Pima 29 13 5 11 15 14 8 10 3 0

180 108 27 50 85 75 76 63 8 2

Arizona Total =

259 164 50 74 144 134 138 112 24 4

Note: * Numbers in parentheses () correspond to the following list of health service contractors within Arizona: (1) Adapt, Inc.; (2) Behavioral Health Agency of Central Arizona (BHACA); (3) Behavioral Health Services, Inc. (BHS, Yuma); (4) The Caring Place; (5) CODAMA; (6) Colorado River Indian Tribes (CRIT); (7) Community Care Network (CNN); (8) Copper Basin Behavioral Health Association; (9) East Valley Behavioral Health Association (EVBHA); (10) Gila County Guidance Clinic, Inc.; (11) Gila River Indian Community; (12) La Questa Alcohol and Drug Treatment Center; (13) The Navajo Tribe; (14) Northern Arizona Comprehensive Guidance Center (NACGC); (15) Rim Guidance Center, Inc.; (16) Salt River Pima-Maricopa Indian Community; (17) Southeastern Arizona Behavioral Health Services (SEABHS); and (18) Tri-Community Counseling Services.

Source: Arizona Department of Health Services, Office of Community Behavioral Services, Behavioral Health Contractors and Subcontractors list, October, 1986.

Health Maintenance Organizations (HMO)

Health Maintenance Organizations (HMOs), in their various forms, are the major health care financing alternatives in this era of hospital deregulation.

HMO is a broad term encompassing a variety of health care delivery systems utilizing group practice and providing alternatives to the fee-for-service, private practice of medicine and allied health professions. They are essentially prepaid, organized systems for providing comprehensive health care within a geographic area to all persons under contract. The HMO member is allowed to choose a primary care physician from among those participating in the HMO.

The cost is typically a set rate for each individual with minimal co-payments (out-of-pocket expenses) for certain services. The plans are designed with incentives to reduce the length of time and number of stays in hospitals, as well as with incentives for preventive health measures. These measures help keep health care provider costs down and, in return, members receive lower annual premiums.

According to Harold S. Luft, a leading HMO analyst, an HMO assumes contractual responsibility to provide a specified range of health services for a fixed periodic rate and the HMO assumes at least part, or all, of the financial risk of providing services.

There are 3 basic organizational structures which an HMO can use: 1. the Staff Model; 2. the Group Model; and 3. the Independent Practice Association (IPAs).¹

In the staff model, services are provided by salaried physicians who are employees of the HMO. As employees, the physicians serve only HMO members.

In the group model, medical services are provided by a group of physicians, often as part of a multi-specialty group practice.

In the IPA, individual physicians and group practices form the physician provider network, again at the risk for service delivery for a per capita fee. HMO members do not necessarily account for most of the patients served.

Nationally, HMOs account for about 28% of the market, but the majority of medical bills are still paid on a cost-based reimbursement. However, the trend is toward the prepaid, packaged care programs that HMOs can provide.² About 19 million people were enrolled in HMOs in 44 states at the beginning of 1986.³ A survey of 165 health care providers in Arizona showed HMOs have grown more than 800% from 1981 through 1986.⁴

Physicians who want to remain independent, with less financial risk than an HMO, are forming Preferred Provider Organizations (PPOs), also referred to as Preferred Provider Arrangements (PPAs).

This arrangement usually involves a group insurance buyer (usually an employer) who contracts with providers to obtain their services at lower than usual fees. In return, the provider is offered increased patient volume and prompt payment.

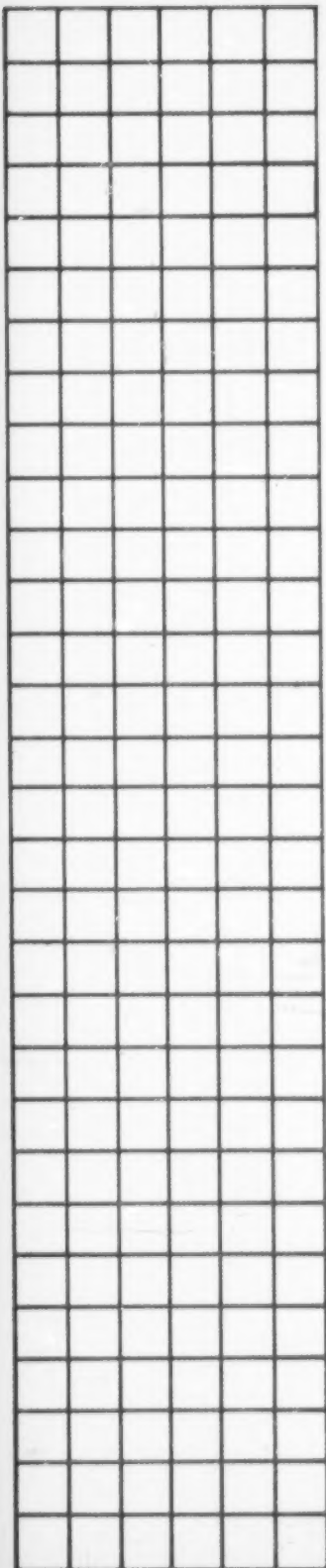
The insured are not required to use the preferred providers, exclusively, but they are encouraged to do so through incentives such as the reduction or elimination of cost-sharing. Many preferred provider arrangements include a utilization review program to ensure that only medically necessary services are rendered to patients. This is an essential component so losses incurred by offering discounted fees are not recouped through inappropriate use of services.

In Arizona, mergers and buyouts have been common in the industry since the first HMO was organized in 1974. At the end of 1986, Maxicare USA, Inc., bought HealthAmerica Corp. of Tucson, Inc. HealthAmerica was one of the 3 largest HMOs in Arizona at the time of sale. It will continue to operate as Maxicare-HealthAmerica in the Tucson area and in Cochise County.

Maxicare now becomes the state's second largest HMO — a distant second to Cigna Healthplan of Arizona, Inc. Cigna had 241,121 members in 1986 with revenues of more than \$221 million.

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Health Maintenance Organizations



(continued from page 123)

Intergroup Prepaid Health Services of Arizona Inc., an IPA-HMO, provides comprehensive health care services through a network of multi-specialty group practices. Intergroup had 61,805 members in 1986 and ranked among the top 3 providers in the state.⁵

Patient's Choice, Equicor and Intergroup join Maxicare in extending services into counties outside the metropolitan areas. Patient's Choice extends coverage into every county, except Coconino and Yavapai.⁶ Equicor has coverage in every county except Greenlee.⁷ Intergroup is currently providing coverage in Sierra Vista in Cochise County and has plans to extend coverage into other rural communities.⁸

While there are HMOs available in the outlying counties, the picture has been changing rapidly as doctors enter and

leave the program. Anyone selecting an HMO plan option should check with the physicians they want to use as primary care providers to confirm their continued participation.

In some rural areas, doctors are getting together to form their own HMOs and this could be another alternative for consumers to consider.

¹ Teitelbaum and Engquist-Seidenberg, *The Health Care System In Transition*, 1987, p. 19.

² *The Health Care System In Transition*, p. 19.

³ *The Health Care System In Transition*, p. 19.

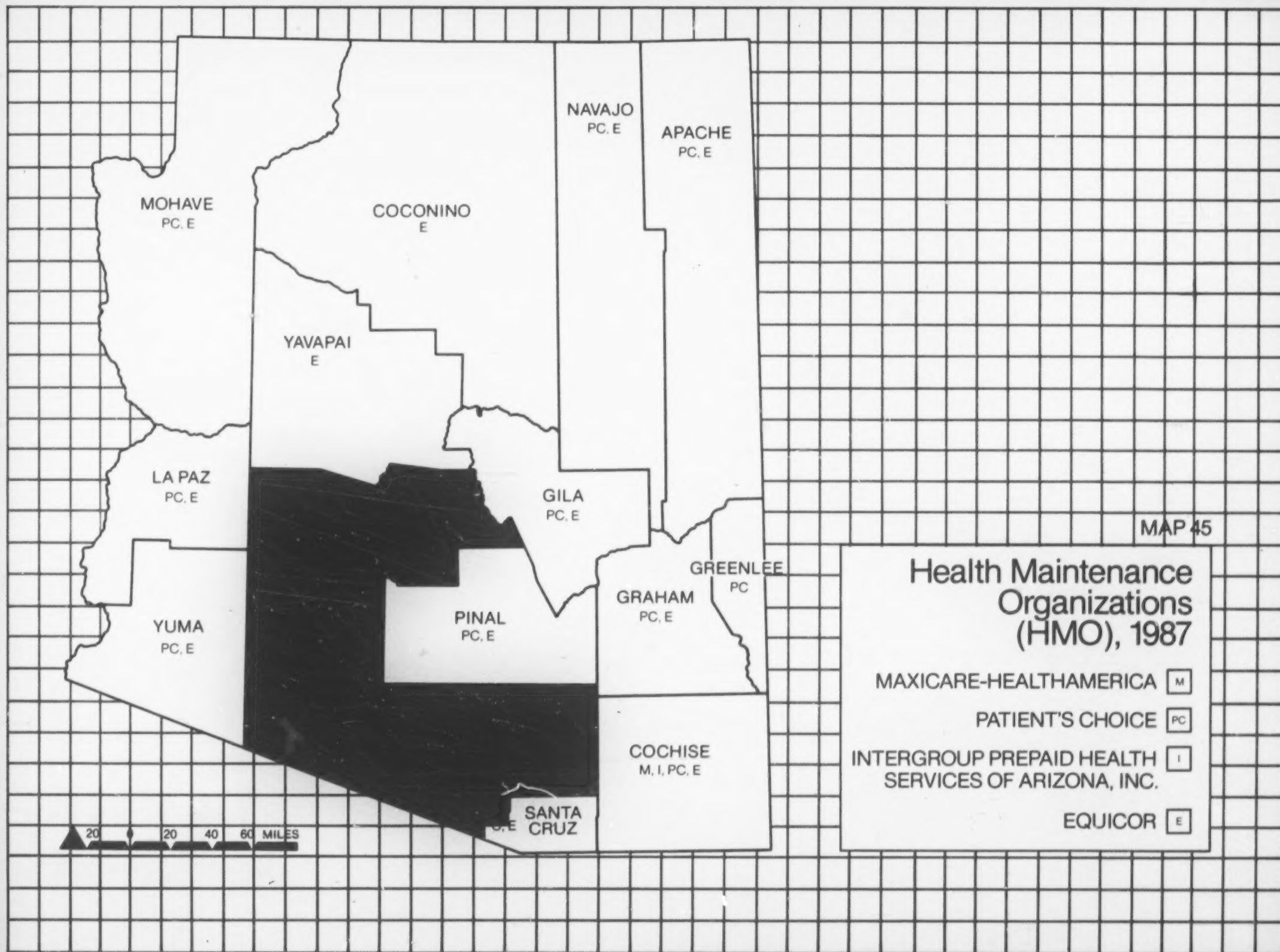
⁴ From a survey developed and analyzed by Frank Williams, Ph.D, for the Arizona Statewide Health Coordinating Council, July, 1986.

⁵ Information provided by the Arizona Department of Insurance and HMOs, June 9, 1987.

⁶ Information provided by Patient's Choice Member Service Department, June 9, 1987.

⁷ Information provided by Equicor Marketing Department, June 9, 1987.

⁸ Information provided by Intergroup of Arizona Administrative Department, July 10, 1987.



Home Health Agencies/Hospices

Home Health Agencies/Hospices

Skilled nursing and rehabilitative services are provided by a home health agency (HHA) on an intermittent basis at the person's residence. The services are designed to promote, maintain and restore health or to minimize the effects of illness and disability.

Home health services are designed to help patients achieve their highest level of independence while reducing the time spent in hospitals, nursing homes, or other long-term care settings.

These services may include care by registered or licensed practical nurses, personal care by home health aides, nutritional consultation from a registered dietitian, medical social services and therapeutic services such as physical, occupational and speech therapy.¹

Medical supplies, durable medical equipment and physician-prescribed drugs may also be provided. Potentially hazardous drugs are not given without the informed consent of the patient or the patient's family. In Arizona, Medicare-certified home health agencies must provide skilled nursing care and at least 1 rehabilitative service.²

A variety of patients use home health care, but the elderly are the most frequent

TABLE 53

LICENSED HOME HEALTH AGENCIES IN ARIZONA, 1987 BY COUNTY

Counties Without an SMSA	Number of Facilities	Ownership			Medicare Certified	AHCCCS Provider	Hospital Affiliation
		Government	Non-Profit	Profit			
Apache	1	0	1	0	1	1	1
Cochise	3	1	2	0	3	2	2
Coconino	3	1	2	0	3	2	1
Gila	1	0	0	1	1	0	0
Graham	0	0	0	0	0	0	0
Greenlee	0	0	0	0	0	0	0
La Paz	0	0	0	0	0	0	0
Mohave	3	0	3	0	3	0	0
Navajo*	0	0	0	0	0	0	0
Pinal	1	1	0	0	1	1	0
Santa Cruz	1	1	0	0	1	1	0
Yavapai	4	1	3	0	4	2	2
Yuma	2	1	1	0	1	1	0
	19	6	12	1	18	10	6
Counties With an SMSA							
Maricopa	29	1	12	16	26	18	6
Pima	17	1	7	9	12	10	4
	46	2	19	25	38	28	10
Arizona Total =	65	8	31	26	56	38	16

Notes: * Navajo County has 2 branch offices from the Northern Arizona HHA based in Coconino County.

Source: Information provided by Bonnie James, health care facilities inspection specialist, Arizona Department of Health Services; Office of Health Care Licensure, Table of Licensed Home Health Care Agencies, revised, April 1, 1987; and information provided by the AHCCCS report, May 7, 1987.

Ownership: Branch offices indicate single ownership and licensure in Arizona and as such are not included as separate agencies in the totals.

Medicare Certified: Medicare payments to providers are based upon a set of established guidelines. Home Health Agencies and Hospices must be certified to serve Medicare patients or they may not be paid through Medicare funds.

AHCCCS Provider: Includes a disclaimer to accuracy due to the movement of providers in and out of the system.

There are 5 hospices in Arizona. Under the current Arizona licensure rules and regulations all hospices are licensed as home health agencies. These agencies provide both home health care services and specialized care for the terminally ill.

Hospices

users because of their increased chances of having a chronic, debilitating disease.

Other patients may include those who are recuperating from major medical treatment, who need professional supervision and care, but do not require hospitalization or 24-hour nursing care. The homebound with chronic or temporarily debilitating health conditions requiring intermittent professional care, are also likely to use home health services.

Approximately 75% of Arizonans served by home health agencies use the service on a short-term basis.³ Principally, home health care agencies offer skilled nursing care and assorted therapy options. Services can also include home-delivered meals, respite care, telephone reassurance, transportation and adult day care.

There are 65 home health agencies in Arizona licensed by the Arizona Department of Health Services' Office of Long Term Care Services — 46 of those are in Maricopa and Pima Counties.

There is only 1 agency each in Apache, Gila, Pinal and Santa Cruz Counties and no agencies in Graham, Greenlee or La Paz Counties. There also are no agencies in Navajo County, but there are 2 branch offices in Holbrook and Show Low from the Northern Arizona HHA based in Flagstaff (Coconino County).⁴

Hospice is a concept, rather than a place. Hospice care can be extended through a home- or a hospital-based health care program. A hospice may be a freestanding unit, an autonomous unit within a hospital, or an autonomous part of a home health agency. Under current Arizona licensure rules and regulations, all hospices are licensed as home health agencies.

A hospice is a program to aid terminally ill patients and their families through the dying process and to provide an alternative to regular hospital care. Hospices often build upon extensive volunteer help and are coordinated through an extended community network. A hospice, through its nurse-coordinated program, provides a continuum of home, outpatient and home-like inpatient care.

Hospice care is available 24-hours-a-day to the patient and their families. This includes bereavement services after the patient's death. Hospices in Arizona currently do not extend their care to include AIDS victims.⁵

There are only 5 hospices in the state licensed as home health facilities. They are located in Cottonwood, Lake Havasu City, Phoenix, Tucson and Yuma. There are at least 9 more hospices in Arizona that offer support care, but they do not meet all of the requirements for being licensed in the state.⁶ There were more than 1,500 hospices in the United States in 1986.⁷

All 5 of Arizona's licensed hospices are non-profit; 3 of them (Cottonwood, Phoenix and Tucson) are certified by Medicare. Medicare pays the full approved cost of all covered home visits.⁸

Hospices can offer a variety of services including: skilled professional nursing; physical, occupational, speech and respiratory therapy; medical social services; home health aid; nutrition consultation; and personal support care.⁹

¹ Arizona Department of Health Services, Office of Long Term Care Services, *Licensed Long Term Health Care Facilities 1987 Directory*.

² Interview with Doris Hartter, associate director, St. Joseph's Home Health Agency, July 22, 1987.

³ The Pritzlaff Commission on Long Term Care, *Long-Term Care in Arizona, Final Report*, July, 1984, p.9.

⁴ ADHS, Division of Institution Licensure, *Arizona Licensed Home Health Care Agencies List*, April, 1987.

⁵ Interview with Jackie Wilson, a registered nurse with the ADHS, Office of Long Term Care Services, June 8, 1987.

⁶ Figures provided by the ADHS, Division of Health Care Institution Licensure.

⁷ Lenora Finn Paradis and Scott B. Cummings, *The Evolution of Hospice in America Toward Organizational Homogeneity*, *Journal of Health and Social Behavior*, December, 1986, p. 370.

⁸ Figures provided by the ADHS Home Health Service.

⁹ ADHS, Office of Long Term Care Services, *Licensed Long Term Health Care Facilities 1987 Directory*, p. 69.

TABLE 54
LICENSED HOME HEALTH AGENCIES, BY COMMUNITY 1987

	Ownership						
	Number of Facilities						
	Government	Non-Profit	Medicare Certified	AHCCCS Provider	Hospital Affiliation		
Apache County							
Springerville							
White Mountain Communities	-	x	-	x	x	x	
Hospital HHA							
Total	1	0	1	0	1	1	1
Cochise County							
Bisbee							
Cochise County Health Department	x	-	-	x	x	-	
HHA (branch offices in Benson, Douglas, Sierra Vista and Willcox).							
Douglas							
Southeast Arizona Medical Center HHA	-	x	-	x	-	x	
Sierra Vista							
Sierra Vista HHA	-	x	-	x	x	x	
Total	3	1	2	0	3	2	2
Coconino County							
Flagstaff							
Coconino County Health Department	x	-	-	x	x	-	
HHA (branch offices in Fredonia, Page and Williams)							
Flagstaff							
Flagstaff Medical Center HHA	-	x	-	x	x	x	
Flagstaff							
Northern Arizona HHA*	-	x	-	x	-	-	
(branch offices in Holbrook and Show Low in Navajo County)							
Total	3	1	2	0	3	2	1
Gila County							
Claypool							
Copper Sun Home Health**	-	-	x	x	-	-	
Total	1	0	0	1	1	0	0
Graham County							
Total	0	0	0	0	0	0	0
Greenlee County							
Total	0	0	0	0	0	0	0
La Paz County							
Total	0	0	0	0	0	0	0
Maricopa County							
Total	29	1	12	16	26	18	6
Mohave County							
Lake Havasu City	-	x	-	x	-	-	
Havasus Regional HHA							
Lake Havasu City	-	x	-	x	-	-	
Hospice of Havasu, Inc.							
Kingman							
Desert Home Health of Mohave	-	x	-	x	-	-	
(branch office in Bullhead City)							
Total	3	0	3	0	3	0	0
Navajo County							
Holbrook and Show Low*							
(branch offices of the Northern Arizona HHA in Flagstaff - see Coconino County)							
Total	0	0	0	0	0	0	0

	Ownership						
	Number of Facilities						
	Government	Non-Profit	Medicare Certified	AHCCCS Provider	Hospital Affiliation		
Pima County							
Total	17	1	7	9	12	10	4
Pinal County							
Florence							
Pinal County HHA		x	-	-	x	x	-
Total	1	1	0	0	1	1	0
Santa Cruz County							
Nogales							
Santa Cruz County HHA		x	-	-	x	x	-
Total	1	1	0	0	1	1	0
Yavapai County							
Cottonwood							
Lawrence Memorial Hospice		-	x	-	x	-	x
Cottonwood							
Marcus J. Lawrence Home Health		-	x	-	x	x	x
Prescott							
Central Yavapai		-	x	-	x	-	-
Home Health Care Services							
Prescott							
Yavapai County		x	-	-	x	x	-
Health Department Agency							
Total	4	1	3	0	4	2	2
Yuma County							
Yuma							
Hospice of Yuma		-	x	-	-	-	-

Yuma

Yuma County Health Department HHA

x - - x x -

Total

2 1 1 0 1 1 0

Counties Without an SMSA

19 6 12 1 18 10 6

Counties With an SMSA

Maricopa

29 1 12 16 26 18 6

Pima

17 1 7 9 12 10 4

46 2 19 25 38 28 10

Arizona Total =

65 8 31 26 56 38 16

* Northern Arizona HHA in Flagstaff (Coconino County) has two branch offices at Holbrook and Show Low in Navajo County.

** Joint ownership, private and corporate for profit. Three HHAs in Maricopa County have the same arrangement as in Claypool.

Source: Information provided by Bonnie James, health care facilities inspection specialist, Arizona Department of Health Services, Office of Health Care Licensure; Office of Health Care Licensure, Table of Licensed Home Health Care Agencies, revised, April 1, 1987; and information provided by the Arizona Health Care Cost Containment System (AHCCCS) report, May 7, 1987, (includes a disclaimer to accuracy of information due to movement of providers in and out of the system).

Ownership: Branch offices indicate single ownership and licensure in Arizona and as such are not included as separate agencies in the totals.

Medicare Certified: Medicare payments to providers are based upon a set of established guidelines. Home Health Agencies and Hospices must be certified to serve Medicare patients or they may not be paid through Medicare funds.

AHCCCS Provider: Includes a disclaimer to accuracy due to the movement of providers in and out of the system.

There are 5 hospices in Arizona. Under the current Arizona licensure rules and regulations all hospices are licensed as home health agencies. These agencies provide both home health care services and specialized care for the terminally ill.

Hospitals

Hospitals

Rural hospitals represented 48% of the total number of hospitals in the United States in 1984. On average, rural hospitals are one-third as big as their urban counterparts, have predictably lower occupancy rates and provide roughly one-quarter of inpatient services in obstetrics, surgery and general medical services.¹

Rural hospitals play a significant role in the national health care system, but several sources are projecting that a number of them will close in the coming years due to financial problems. So far, Arizona has generally avoided this trend. Although all of the state's 38 rural hospitals (10 of those are federal hospitals) remained open in 1986, 1 closed in 1987 and at least 6 or 8 others are on the brink of insolvency.² There are a total of 94 hospitals in the state (17 of those are federal).³

The 38 rural hospitals have 2,651 beds (730 of those are federal). Overall, there are 14,377 beds in the state with 1,987 of those in federal hospitals. Nationally, each state in 1985 averaged 120 hospitals with 21,973 available beds.⁴ That calculates to 5.54 beds per 1,000 population. Arizona's ratio is 4.14 beds per 1,000.⁵

The advent of Medicare/Medicaid in 1965, Diagnosis Related Groups (DRGs) in 1983 and hospital deregulation in 1985 has dramatically changed

the health care picture in recent years. Hospital administrators find themselves in a fiercely competitive market far removed from the days of being able to charge actual service cost plus a little more.

The days of overcrowding in hospitals appears to be over, too. In 1984, Arizona averaged a 65.4% occupancy rate, below the national average of 69.7%.⁶ The national average has dropped more than 20 points from 89.8% in 1965.⁷ Lower occupancy rates result from many factors. Health Maintenance Organizations (HMOs), outpatient and ambulatory surgery have all played a part in lessening the average length of stay in hospitals. Low occupancy rates have resulted in decreased revenue and have forced administrators to re-evaluate their health care strategies.

Some hospitals have opted for linking together into multi-hospital chains. National for-profit chains are represented in Arizona by Humana, Hospital Corporation of America (HCA) and National Medical Enterprises (NME). One of the first multi-hospital systems in the country developed in Phoenix as Samaritan Health Services. This non-profit hospital organization currently has the most extensive network of rural hospitals and clinics in the state. They own or lease-manage 4 rural, acute-care facilities: Havasu Re-

(continued on page 134)

TABLE 55

HOSPITALS IN ARIZONA, 1987 BY COUNTY

Counties Without an SMSA	Non-Federal		Federal	
	Hospitals	Beds	Hospitals	Beds
Apache	2	70	2	136
Cochise	6	308	1	95
Coconino	2	135	1	108
Gila	3	242	1	36
Graham	1	42	0	0
Greenlee	0	0	0	0
La Paz	1	39	0	0
Mohave	3	207	0	0
Navajo	3	102	2	88
Pinal	3	211	1	30
Santa Cruz	1	49	0	0
Yavapai	2	233	1	217
Yuma	1	283	1	20
	28	1,921	10	730
Counties With an SMSA				
Maricopa	37	7,836	4	802
Pima	12	2,633	3	455
	49	10,469	7	1,257
Arizona Total =	77	12,390	17	1,987

Source: Arizona Department of Health Services, Division of Health Care Institution Licensure, Health Economics and Facilities Review, January, 1987.

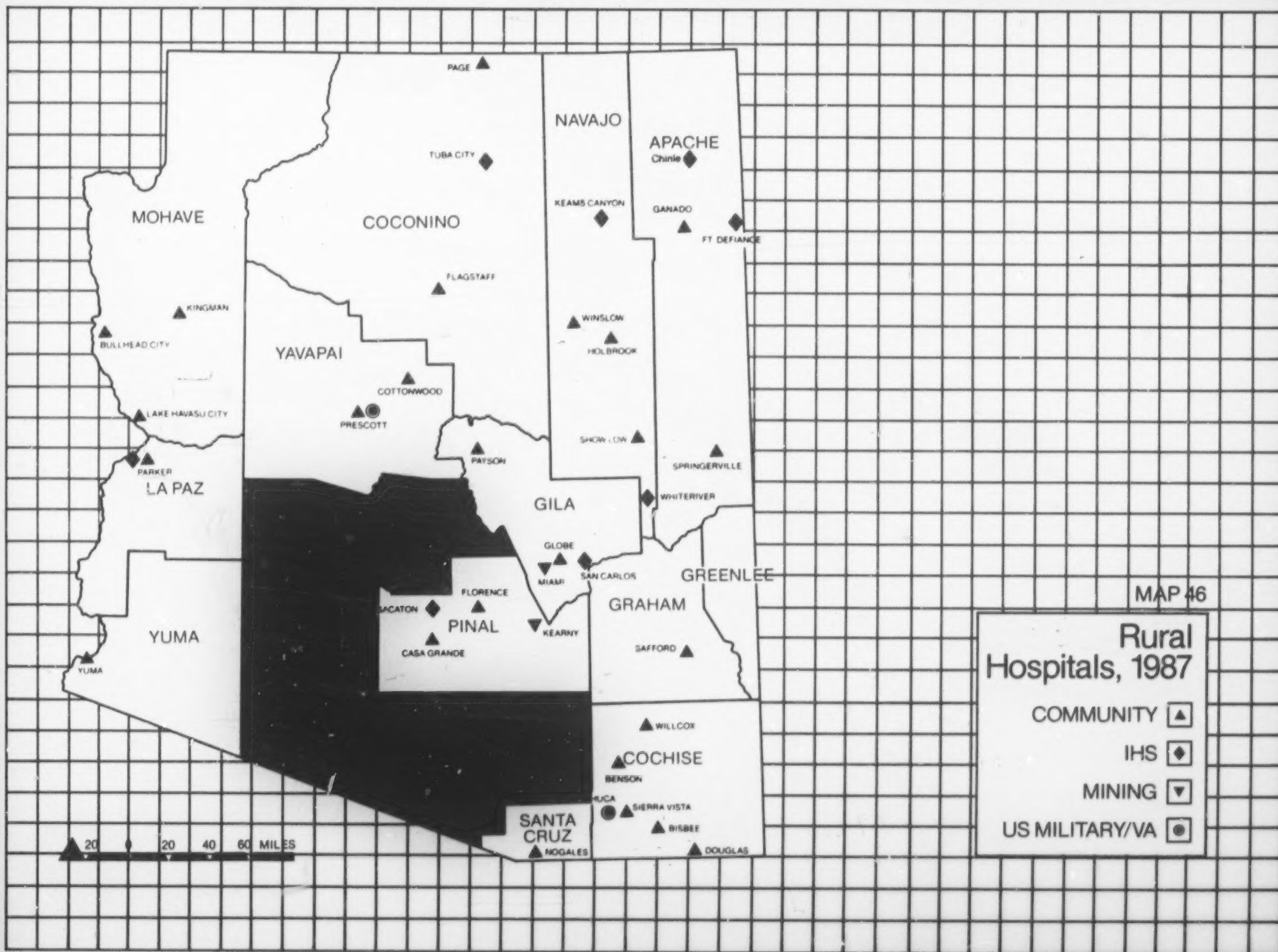


TABLE 56

HOSPITALS IN ARIZONA, 1987 BY COMMUNITY

		Non-Federal		Federal	
		Hospitals	Beds	Hospitals	Beds
Apache County					
Sage Memorial Hosp.				USPHS Indian Hosp.	
Ganado, NP	45			Chinle	60
White Mountains				USPHS Indian Hosp.	
Community Hosp.				Fort Defiance	76
Springerville, NP	25				
Total	2	70		Total	2 136
Cochise County					
Benson Hosp.				Raymond W. Bliss	
Benson, NP	22			Army Hosp.	
Copper Queen				Fort Huachuca	95
Community Hosp.					
Bisbee, NP	49				
Northern Cochise					
Community Hosp.					
Willcox, NP	24				
Ramsey Canyon Hosp.					
Sierra Vista, P	36				
Sierra Vista					
Community Hosp.					
Sierra Vista, NP	55				
Southeast Arizona					
Medical Ctr.					
Douglas, NP	122				
Total	6	308		Total	1 95
Coconino County					
Flagstaff Medical Ctr.				USPHS Indian Hosp.	
Flagstaff, NP	110			Tuba City	108
Page Hosp.					
Page, NP	25				
Total	2	135		Total	1 108
Gila County					
Gila County				USPHS Indian Hosp.	
General Hosp.				San Carlos	36
Globe, G	149				
Lewis R. Pyle					
Memorial Hosp.					
Payson, NP	44				
Miami Inspiration					
Hosp., Inc.					
Miami, P	49				
Total	3	242		Total	1 36
Graham County					
Mount Graham					
Community Hosp., Inc.					
Safford, NP	42				
Total	1	42		Total	0 0
Greenlee County					
Total	0	0		Total	0 0
La Paz County					
Parker Comm. Hosp.				USPHS Indian Hosp.	
Parker, NP	39			Parker	
Total	1	39		Total	1 20
Maricopa County					
		7,836			802
Total	37	7,836		Total	4 802
Mohave County					
Bullhead Comm. Hosp.					
Bullhead City, NP	36				
Havasupai Reg. Hosp.					
Lake Havasu City, NP	88				
Kingman Reg. Hosp.					
Kingman, NP	83				
Total	3	207		Total	0 0

Non-Federal			Federal		
	Hospitals	Beds		Hospitals	Beds
Navajo County					
Navapache Hosp.			USPHS Indian Hosp.		
Show Low, NP		35	Keams Canyon		38
Northland Medical Ctr.			USPHS Indian Hosp.		
Holbrook, NP		25	Whiteriver		50
Winslow Mem. Hosp.					
Winslow, NP		42			
Total	3	102	Total	2	88
Pima County					
		2,633			455
Total	12	2,633	Total	3	455
Pinal County					
Casa Grande Reg.			USPHS Indian Hosp.		
Med. Ctr.			Sacaton		30
Casa Grande, NP		100			
Kennecott Samaritan					
Hosp.					
Keamy, P		20			
Pinal General Hosp.					
Florence, G		91			
Total	3	211	Total	1	30
Santa Cruz County					
Holy Cross Hosp.					
and Health Center					
Nogales, NP		49			
Total	1	49	Total	0	0
Yavapai County					
Marcus J. Lawrence			VA Medical Center		
Memorial Hosp., Inc.			Prescott		217
Cottonwood, NP		104			
Yavapai Regional					
Medical Ctr.					
Prescott, NP		129			
Total	2	233	Total	1	217

Yuma County					
Yuma Regional					
Medical Ctr.					
Yuma, NP		283			
Total	1	283	Total	0	0

Total Counties Without an SMSA					
Total	28	1,921	Total	10	730

Counties With an SMSA					
Maricopa	37	7,836		4	802
Pima	12	2,633		3	455
	49	10,469		7	1,257

Arizona Total =	77	12,390	Total	17	1,987
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Note: G = Government (USPHS = United States Public Health Service and VA = Veteran's Administration); NP = Non-Profit; and P = Proprietary.

Source: Arizona Department of Health Services Division of Health Care Institution Licensure, Health Economics and Facilities Review, January, 1987.

(continued from page 130)

gional Hospital, 88 beds, in Lake Havasu City; Kennecott Samaritan Hospital, 20 beds, in Kearny; White Mountain Communities Hospital, 25 beds, in Springerville; and Page Hospital, 25 beds, in Page. Samaritan also operates or has management contracts with a dozen clinics scattered throughout the state.⁸

Other hospitals have opted for changing how they use their bed space. Figures from 1985 show there were 1,353 beds in Arizona designated for psychiatric care by the Arizona Department of Health Services. That was a 50% increase from 1979. A significant portion of those were for patients with chemical dependency problems, according to ADHS. Most of the psychiatric beds are located in Maricopa and Pima

Counties and include the 2 newly-opened Charter Hospitals; the Arizona State Hospital; the Camelback Hospitals in Phoenix, Scottsdale and the West Valley and Palo Verde Hospital and Sonora Desert Hospital in Tucson. There is also Ramsey Canyon Hospital in Sierra Vista.

Nine rural hospitals in Arizona with under 50 beds have also found a way to use their bed space more effectively. They are taking part in the "Swing Bed" program that allows hospitals to offer unoccupied acute care beds to patients needing skilled nursing care on a limited basis. The hospital benefits by being able to upgrade the skills of its staff to

provide long-term care and the patients benefit by receiving skilled, supervised care while waiting to make the transition to a more permanent solution for their health care needs. The program is not a big moneymaker, but it has helped stabilize what otherwise would be a negative situation.⁹

Rural hospitals can be expected to continue as the central role player in the rural health care system, but they will have to remain flexible to adapt to the rapidly changing future. Providing quality health care will remain the primary consideration.

¹ Rosenblatt and Moscovice, *Rural Health Care*, 1982, p.178.

² Interview with Charline Franz, director of governmental affairs for the Arizona Hospital Association, June 11, 1987.

³ Arizona Department of Health Services, Division of Health Care Institution Licensure, *Health Economics and Facilities Review*, 1987.

⁴ Central Arizona Health Systems Agency, *Impact of Deregulation*, 1986, chart title: Hospitals, Occupancy Rate, Average Hospital Size, 1984, Ranked By Hospital Size.

⁵ American Hospital Association, *American Hospital Association Statistics*, 1985 edition.

⁶ *Impact of Deregulation and American Hospital Association Statistics*, 1985 edition (AHA figures exclude psychiatric hospitals).

⁷ Easterbrook, *The Revolution*, *Newsweek*, Jan. 26, 1987, p.49, and *Impact of Deregulation*.

⁸ Interview with Jim Beeler, director of Planning and Marketing, Regional Operations, and Lisa Stanojlovic, manager of Regional Communications for Samaritan Health Services, June 10 and 15, 1987.

⁹ Interview with Charline Franz, June 15, 1987.

Nursing Care Institutions

Nursing care institutions (NCIs) are the typical example of a "formal" long-term care agency, but not the only example. Home health agencies and hospices offer long-term care, too.

Long-term care may vary from simple social and supportive care to intensive nursing and rehabilitation assistance. People with prolonged and chronic conditions, unable to function independently for as little as 3 months, are classified as needing long-term care.¹

However, there can be times when long-term care patients may need short-term (acute) care and short-term care patients may need the skills of long-term care. Hospice care for the terminally ill falls into this gray area. The care can be very extensive — requiring the assistance of highly-skilled nursing. However, Medicare, on average, will pay for only 60 days of hospice care. That's 1 month less than the definition of long-term care. Yet, hospices are included in the *Licensed Long Term Health Facilities 1987 Directory*. The Directory also lists home health agencies, even though people use this service on a short-term basis approximately 75% of the time.²

The impaired elderly, the chronically mentally ill, the developmentally disabled and the severely physically disabled all use long-term care. Approx-

imately 75% of all long-term care assistance in Arizona is "informal" — provided by family members, friends and volunteers. That is about the national average.³

However, when most people talk about long-term care they will think of nursing care institutions (or nursing homes) first. And the people who are thought to use nursing care institutions most are the elderly. The number of Arizonans who were 65+ increased 22% from 308,514 in 1980 to 392,000 in 1984.⁵ The number of elderly using nursing homes in Arizona increased 17% from 1982 to 1986.⁶

In 1984, Arizona counties spent approximately \$48 million for long-term care of the indigent. Of that, \$40 million went for nursing home care used by only 8% of those served. This is the national trend, too. State, federal and private funding expenditure in Arizona was conservatively \$200 million.⁴

The number of nursing homes in Arizona went from 79 in 1982, when deregulation took effect, to 133 in 1987 (these numbers do not include Indian Health Service). Maricopa and Pima Counties accounted for 96 of all the nursing homes in the state while Apache and Greenlee Counties did not have any facilities.⁷ The limited availability of long-term care in some of Arizona's rural areas can cause hardships when elderly people,

(continued on page 137)

TABLE 57

NURSING CARE INSTITUTIONS IN ARIZONA, 1987 BY COUNTY

Counties Without an SMSA	Licensed Beds					Total Beds
	Number of Facilities	Personal Care	Intermediate Care	Skilled Nursing Care	Medicare Certified	
Apache	0	0	0	0	0	0
Cochise	7	44	102	304	65	450
Coconino	2	10	60	116	20	186
Gila	4	29	35	254	15	318
Graham	2	20	44	184	0	248
Greenlee	0	0	0	0	0	0
La Paz	0	0	0	0	0	0
Mohave	3	20	80	260	37	360
Navajo	2	10	30	98	6	138
Pinal	4	2	36	284	22	322
Santa Cruz	1	0	0	31	0	31
Yavapai	7	44	300	418	43	762
Yuma	5	74	148	307	28	529
	37	253	835	2,256	236	3,344
Counties With an SMSA						
Maricopa	76	580	1,433	7,513	817	9,526
Pima	20	126	338	2,346	138	2,812
	96	708	1,771	9,859	955	12,338
Arizona Total =	133	961	2,606	12,115	1,191	15,682

* Medicare Certified beds are included in Skilled Nursing total. Indian Health Service beds not included in any of these figures.

¹ Personal Care - Staff provides supportive services in personal needs, such as bathing, dressing, getting in and out of bed. Social needs of companionship and activities are stressed.

² Intermediate Care - Staff provides more direct care and assistance with personal care, such as grooming, toileting, dressing, feeding and transfers from bed to chair.

³ Skilled Care - Staff provides supervision and/or total direct care in all or many physical and personal care needs, as well as medical needs such as dressing changes, oxygen and respiratory assistance.

⁴ Medicare Certified - Medicare payments to providers are based upon a set of established guidelines. Nursing care institutions must be certified to serve Medicare patients or they may not be paid through Medicare funds.

Source: Arizona Department of Health Services, Office of Health Care Institution Licensure, list of Licensed Nursing Care Institutions, revised April, 30, 1987.

Nursing Care
Institutions

TABLE 58

NURSING CARE INSTITUTIONS IN ARIZONA, 1987 BY COMMUNITY

	Licensed Beds				
	Number of Facilities	Personal Care	Intermediate Care	Skilled Nursing Care	Medicare Certified
Apache County					
Total	0	0	0	0	0
Cochise County					
Benson	1	0	0	60	0
Bisbee	1	0	0	17	0
Douglas	2	4	16	87	43
Sierra Vista	2	40	86	116	22
Willcox	1	0	0	24	0
Total	7	44	102	304	65
Coconino County					
Flagstaff	1	10	30	40	6
Sedona	1	0	30	76	14
Total	2	10	60	116	20
Gila County					
Globe	2	0	0	169	0
Payson	2	29	35	85	15
Total	4	29	35	254	15
Graham County					
Safford	2	20	44	184	0
Total	2	20	44	184	0
Greenlee County					
Total	0	0	0	0	0
La Paz County					
Total	0	0	0	0	0
Maricopa County					
Avondale	1	0	0	120	0
Chandler	3	0	120	240	20
Glendale	6	28	104	863	90
Laveen					
Mesa	11	81	288	1,138	140
Peoria	4	8	312	391	34
Phoenix	29	283	307	2,746	286
Scottsdale	10	102	106	917	87
Sun City	6	70	72	646	83
Sun City West	1	0	60	60	12
Tempe	2	0	0	220	54
Wickenburg	1	0	20	20	0
Youngtown	1	8	44	76	11
Total	76	580	1,433	7,513	817
Mohave County					
Bullhead City	1	0	0	120	31
Kingman	1	0	40	80	0
Lake Havasu City	1	20	40	60	6
Total	3	20	80	260	37
Navajo County					
Show Low	1	10	30	60	6
Winslow	1	0	0	38	0
Total	2	10	30	98	6
Pima County					
Green Valley	1	19	0	98	9
Tucson	19	109	338	2,248	129
Total	20	128	338	2,346	138
Pinal County					
Apache Junction	1	0	0	120	13
Casa Grande	1	2	36	90	9
Florence	2	0	0	74	0
Total	4	2	36	284	22

	Licensed Beds				
	Number of Facilities	Personal Care	Intermediate Care	Skilled Nursing Care	Medicare Certified
Santa Cruz County					
Nogales	1	0	0	31	0
Total	1	0	0	31	0
Yavapai County					
Camp Verde	1	18	42	60	6
Cottonwood	1	0	30	50	10
Prescott	5	26	228	308	27
Total	7	44	300	418	43
Yuma County					
Yuma	5	74	148	307	28
Total	5	74	148	307	28
Total Counties Without an SMSA					
	37	253	835	2,256	236
Counties With an SMSA					
Maricopa	76	580	1,433	7,513	817
Pima	20	128	338	2,346	138
	96	708	1,771	9,859	955
Arizona Total =	133	961	2,606	12,115	1,191

* Note - Medicare Certified beds are included in Skilled Nursing totals. Indian Health Service beds not included in any of these figures.

¹ Personal Care - Staff provides supportive services in personal needs, such as bathing, dressing, getting in and out of bed. Social needs of companionship and activities are stressed.

² Intermediate Care - Staff provides more direct care and assistance with personal care, such as grooming, toileting, dressing, feeding and transfers from bed to chair.

³ Skilled Care - Staff provides supervision and/or total direct care in all or many physical and personal care needs, as well as medical needs such as dressing changes, oxygen and respiratory assistance.

⁴ Medicare Certified - Medicare payments to providers are based upon a set of established guidelines. Nursing care institutions must be certified to serve Medicare patients or they may not be paid through Medicare funds.

Source: Arizona Department of Health Services, Office of Health Care Institution Licensure, list of Licensed Nursing Care Institutions, revised April, 30, 1987.

(continued from page 135)

who need care, are forced to leave the homes where they have lived their whole lives.

The number of beds in Arizona nearly doubled from 8,318 in 1982 to 15,682 in 1987. However, only 3,344 beds (just under 1/5th of the total number) were in the rural areas as of April of 1987: 253 of them for personal care; 835 for intermediate care; and 2,256 for skilled nursing care. Maricopa and Pima Counties accounted for 12,338 beds: 708 of them for personal care; 1,771 for intermediate care; and 9,859 for skilled nursing care.⁸

Arizona has long been a haven for winter visitors and more and more elderly are deciding to retire in the state. The increase in elderly population, coupled with advancements in medical technology, indicates there will be a continuing need for more quality nursing home care in the state.

¹ Interview with Stan Kleiner, chief planner, Arizona Department of Health Services, Office of Planning, and former staff director of the Pritzlaff Commission, June 29, 1987.

² The Pritzlaff Commission on Long Term Care, *Long-Term Care in Arizona Final Report*, July, 1984, p.9.

³ *Long-Term Care in Arizona Final Report*, p.9.

⁴ *Long-Term Care in Arizona Final Report*, P.3.

⁵ U.S. Department of Commerce, Bureau of Census, *Statistical Abstract of the United States*, 1987 edition, p.23

⁶ The Central Arizona Health Systems Agency, *The Impact of Deregulation*, 1986, pp. 1-2.

⁷ *The Impact of Deregulation and Arizona Department of Health Services Office of Health Care Institution Licensure, Arizona Licensed Nursing Care Institutions List*, 4-30-87.

⁸ *Arizona Licensed Nursing Care Institutions List*.

Primary Health Care Centers

Primary Health Care Centers

Non-profit health centers, with community volunteers serving as a board of directors, are a major part of the primary care system. There are currently 29 community-based health centers delivering primary care services in Arizona. Most of the centers (21 of them, or 72%) are located in rural counties.

Federally-Assisted Centers

Nine of the 29 health centers receive assistance from the Department of Health and Human Services (DHHS) in the form of grant monies under Section 330, Community Health Centers, and Section 329, Migrant Health Centers. Eligibility for assistance under these 2 Sections is based on a community's designation as a Medically Underserved Area (MUA). Nationally, in 1986, there were approximately 580 community health centers receiving federal funds.¹

All of Arizona's federally-assisted centers see Medicare patients and participate in the Arizona Health Care Cost Containment System (AHCCCS). Each center has established a referral system for secondary and tertiary physical and mental health care.

The National Health Service Corps (NHSC) is another federal assistance program. It was established by Congress in 1972 to

improve the geographic distribution of health care personnel. A community is eligible for a NHSC provider only if it is designated a Health Manpower Shortage Area (HMSA). Once designated, a health center may negotiate with DHHS for a physician or dentist.

All of these federal programs attempt to bring primary care services to populations that either lack sufficient local resources to recruit and retain health care providers or are located in areas isolated from urban centers and considered unattractive by most medical practitioners. The intent is that this assistance will help health centers achieve a degree of self-sufficiency while maintaining the scope and quality of their service delivery.²

Non-Federal Centers

Small, non-federally assisted, community-based primary care clinics are an equally important segment of the rural health service delivery system. They do not receive federal assistance because they do not meet the criteria for a MUA or HMSA designation. Their existence depends entirely on the commitment of the community and the dedication of health providers who can work in a relatively isolated situation. Ajo, Arizona, is an example of this commitment.

TABLE 59

PRIMARY HEALTH CARE CENTERS (COMMUNITY-BASED)* IN ARIZONA, 1987 BY COUNTY

Counties Without an SMSA	Community-Based Primary Health Care Centers						
	Federal MUA	Federal HMSA	Federal 330 Funding	Federal 329 Funding	NHSC PPO	NHSC PPA	NHSC Federal Hospital Affiliation
Apache	3	3	0	0	2	0	2
Cochise	2	3	0	0	0	0	1
Coconino	1	0	1	0	0	0	1
Gila	2	0	0	0	0	0	2
Graham	0	0	0	0	0	0	0
Greenlee	0	0	0	0	0	0	0
La Paz	0	1	0	0	0	0	0
Mohave	0	1	0	0	0	0	1
Navajo	2	2	0	0	1	0	0
Pinal	1	2	1	1	0	3	1
Santa Cruz	3	3	1	0	0	2	0
Yavapai	0	0	0	0	0	0	0
Yuma	1	1	1	1	0	2	0
	15	16	4	2	3	7	8
Counties With an SMSA							
Maricopa	2	2	2	1	0	4	0
Pima	4	5	3	0	0	2	3
	6	7	5	1	0	6	3
Arizona Total =	21	23	9	3	3	13	11

* Governed by a voluntary community board.

Source: Arizona Association of Community Health Centers, Inc., and the Rural Health Office (Phoenix Satellite), University of Arizona, June, 1987.

The community creatively established its own Health Service District to help support a minimal level of primary care.

Although not discussed, hospital- and county-based clinics and physician-owned clinics are another part of the

primary care system in rural areas.

¹ American Public Health Association, *The Nation's Health*, Vol. XVI, No. 4, April, 1986, pp. 1 and 4.

² Arizona Association of Community Health Centers, Inc., June, 1987.

TABLE 60

PRIMARY HEALTH CARE CENTERS (COMMUNITY-BASED)* IN ARIZONA, BY COMMUNITY 1987

Community-Based Primary Health Care Centers

	Federal MUA	Federal HMSA	Federal 330	Federal 329	NHSC PPO	NHSC PPA	NHSC Federal	Hospital	Affiliation
Apache County									
Ganado									Young
Navajo Nation Health Foundation (Sage Memorial Hospital)	x ¹	x	2	2 ³	-	-	-	x	Pleasant Valley Community Medical Center (Samaritan Health Service)
St. Johns									
St. Johns Health Center (White Mountain Communities Hospital-Springerville- Samaritan Health Service)	x	x	-	-	-	-	-	x	Total
Sanders/Puerco (in transition)									2
Sanders Community Clinic	x	x	-	-	-	-	-	-	0
Total	3	3	0	0	2	0	0	2	0
Cochise County									
Benson									
Benson Health Services (Carondelet)	x	x	-	-	-	-	-	x	
Bowie									
Bowie Health Services	-	x	-	-	-	-	-	-	
Tombstone									
Tombstone Health Services	x	x	-	-	-	-	1	-	
Total	2	3	0	0	0	0	1	1	
Coconino County									
Page									
Lake Powell Medical Center	x	-	x	-	-	-	-	-	
Williams									
Williams Health Care Center (Samaritan Health Service)	-	-	-	-	-	-	-	x	
Total	1	0	1	0	0	0	0	1	
Gila County									
Pine									
Pine-Strawberry Medical Center (Samaritan Health Service)	x	-	-	-	-	-	-	x	
Graham County									
Total	0	0	0	0	0	0	0	0	
Greenlee County									
Total	0	0	0	0	0	0	0	0	
La Paz County									
Quartzsite (in transition)	-	-	-	-	-	-	-	-	
Salome-Wenden Tri-Valley Medical Center	-	x	-	-	-	-	-	-	
Total	0	1	0	0	0	0	0	0	
Maricopa County									
El Mirage									
Tidwell Family Care Center	x	x	x	x	-	-	-	-	
Phoenix									
Memorial Family Health Center	x	x	x	-	-	4	-	-	
Total	2	2	2	1	0	4	0	0	
Mohave County									
Dolan Springs									
Dolan Springs Clinic and Outpatient Center (Kingman Regional Hospital)	-	x	-	-	-	-	-	x	
Total	0	1	0	0	0	0	0	1	

(continued on page 140)

This image shows a full page of blank graph paper. The grid consists of small squares formed by thin black lines. There are approximately 20 columns and 30 rows of squares. A single horizontal line runs across the middle of the page, dividing it into two equal halves. The paper is otherwise completely blank, with no text or markings other than the grid lines.

	Federal MUA	Federal HMSA	Federal 330 Funding	Federal 329 Funding	NHSC PPO	NHSC PPA	NHSC Federal Hospital Affiliation	
Navajo County								Santa Cruz County
Kayenta								Nogales
Kayenta Community Health Services	x	x	-	-	-	-	-	Santa Cruz Health Center Patagonia (in transition)
Overgaard								Tubac
Rim Country Medical Center	x	x	-	-	1	-	-	Tubac Regional Clinic, Inc.
Total	2	2	0	0	1	0	0	Total
Pima County								Yavapai County
Ajo								Total
Ajo Community Health Center (Samaritan Health Service)	-	-	-	-	-	-	x	0 0 0 0 0 0 0 0
Catalina								Yuma County
Catalina Health Services (Samaritan Health Service)	-	x	-	-	-	-	x	Somerton
Marana								Valley Health Center
Marana Health Center (Samaritan Health Service)	x	x	x	-	-	1	-	Total
Tucson								1 1 1 1 0 2 0 0
El Pueblo Clinic	x	x	-	-	-	-	-	Counties Without an SMSA
Tucson								15 16 4 2 3 7 1 8
El Rio Neighborhood Health Center	x	x	x	-	-	1	-	Counties With an SMSA
Arivaca, Continental, Three Points United Community Health Center	x	x	x	-	-	-	-	Maricopa
Total	4	5	3	0	0	2	0	Pima
Pinal County								6 7 5 1 0 6 0 3
Casa Grande								Arizona Total =
West Pinal Family Health Center	x	x	x	x	-	3	-	21 23 9 3 3 13 1 11
Mammoth								Note: * Governed by a voluntary community board.
San Pedro Valley Health Center (Northwest Hospital-Tucson)	-	x	-	-	-	-	x	¹ x in column indicates yes.
Total	1	2	1	1	0	3	1	² — in column indicates no.
								³ Number indicates multiples of services in column.
								Source: Arizona Association of Community Health Centers and the Rural Health Office (Phoenix Satellite), University of Arizona, June, 1987.

Federally Designated Health Manpower Shortage Areas (HMSA)

There are 3 types of HMSA designations: (1) geographic/service area; (2) population; and (3) facility. In each case, the key factor is unusually high service needs which are not, or cannot, be met by existing health service delivery systems.

Arizona currently has a total of 37 designated Primary Care Health Manpower Shortage Areas (HMSAs): 24 of them are geographic/service areas; 12 are population group listings; and there is 1 facility listing (Maricopa County Jails).

TABLE 61

FEDERALLY DESIGNATED PRIMARY CARE HMSA

<i>County/Area Name/Type¹ and Location² of Designation</i>	<i>Degree of Shortage³</i>	<i>Original Designation</i>	<i>Last Review</i>
Apache County			
G: Ganado/Rough Rock (also see Navajo County) Chinle CCD-west part and Ft. Defiance CCD-west part	01	1981	1986
G: Kayenta (also see Navajo County) Dennehotso CCD	01	1979	1984
G: Puerco/Sanders Puerco CCD: EDs 552, 553, 557, and Ft. Defiance CCD-south part	01	1978	1986
G: St. Johns St. Johns CCD	01	1978	1984
G: Tsaile Chinle CCD-northeast part, Sweetwater CCD-southwest part	01	1982	1986
P: White Mountain Indian Reserva- tion (also see Navajo County) Ft. Apache CCD, Reservation CCD-north part of Black River -Gila County	01	1978	1984
Cochise County			
G: Benson Benson CCD	04	1978	1984
G: Bisbee Bisbee CCD	04	1982	1986
G: Bowie Bowie CCD	01	1978	1984
G: Tombstone City Area Tombstone CCD: EDs 72-73, 76-east of Fairbanks	01	1978	1986

(continued on page 142)

(continued from page 141)

County/Area Name/Type ¹ and Location ² of Designation	Degree of Shortage ³	Original Designation	Last Review
G: Douglas Douglas CCD: EDs 86, 90-92, 93A	03	1985	1985
G: Elfrida Elfrida CCD: EDs 87-89	01	1985	1985
Coconino County			
P: Hopi Indian Reservation (also see Navajo County) Hopi CCD	01	1978	1984
La Paz County			
G: Entire County (formerly Northern Yuma County) Entire County-Parker Division	02	1978	1984
Maricopa County			
P: Gila River Indian Community (also see Pinal County) Gila River Indian Reservation	01	1983	1987
F: Maricopa County Jails Maricopa County Jails	02	1981	1985
P: Medically Indigent Population -Central/South Phoenix CTs 1129-1133, 1138-1161, 1163-1165, 1166.02	01	1978	1986
P: Medically Indigent Population -Guadalupe CT 3200.02	01	1980	1985
P: Poverty/Migrant Population of El Mirage CTs 405.01, 608-609, 610.01	01	1979	1985
Mohave County			
G: Dolan Springs North Kingman CCD: EDs 23- north of Lake Mohave, 24-25, 33-35, 37	01	1985	1985

County/Area Name/Type ¹ and Location ² of Designation	Degree of Shortage ³	Original Designation	Last Review
Navajo County			
G: Ganado/Rough Rock (also see Apache County) Indian Wells CCD-eastern part, Pinon CCD-southeastern part	01	1981	1986
P: Hopi Indian Reservation (also see Coconino County) Hopi CCD	01	1978	1984
G: Heber/Overgaard Snowflake CCD: EDs 418-423	01	1983	1987
G: Kayenta (also see Apache County) Western CCD	01	1979	1984
P: White Mountain Indian Reserva- tion (also see Apache County) Apache CCD	01	1978	1984
Pima County			
G: Arivaca Arivaca CCD: CT 43.05: EDs 257- 262	01	1983	1987
G: Catalina/Oracle Junction (also see Pinal County) Catalina CDP	02	1987	—
G: Continental/Sahuarita Tucson CCD: CT 41.02: EDs 238- 243	01	1983	1987
G: Marana Marana CCD: CT 44.05-northern part	01	1978	1984
P: Medically Indigent Population of South Tucson CTs 1-5, 8-12, 13p, 14, 20-24, 25p, 37p, 38-39, 41p, 43p	02	—	1984
Pinal County			
G: Catalina/Oracle Junction (also see Pima County) Catalina CDP	02	1987	—

County/Area Name/Type ¹ and Location ² of Designation	Degree of Shortage ³	Original Designation	Last Review
P: Gila River Indian Community (also see Maricopa County) Gila River Indian Reservation	01	1983	1987
P: Medically Indigent Population- Central/West Pinal (includes migrant/seasonal farm workers) Portions of Casa Grande CCD, Coolidge CCD, Eloy CCD, Maricopa/Stansfield CCD, Sacaton CCD	02	1981	1985
G: San Pedro Valley (Mammoth) San Manuel CCD: EDs 76-82, 86- 88, 90	02	1984	in process
G: Superior North Pinal CCD: EDs 1-6	01	1981	1985
Santa Cruz County			
G: Entire County Entire County	04	1978	1984
Yavapai County			
G: Seligman Ashfork CCD	02	1979	1984
Yuma County			
G: Wellton Wellton CCD: EDs 228, 229, 239- 240	02	1985	—
P: Poverty Population-Somerton CTs 114-116	01	N/A	1984

¹ Health Manpower Shortage Areas (HMSAs) are designated as either: Geographic/Service area (G); Population groups (P); or Facility (F).

² Boundaries of a HMSA are defined by a Census County Division (CCD), or portions of CCD such as an Enumeration District (ED) or Census Tract (CT). Boundaries of a designation may include CCDs in more than one county. For example, the Kayenta HMSA includes Dennehotso CCD in Apache County and Western CCD in Navajo County.

³ Degree of shortage ranges from 01 (greatest) to 04 (least)*.

GENERAL SOURCES

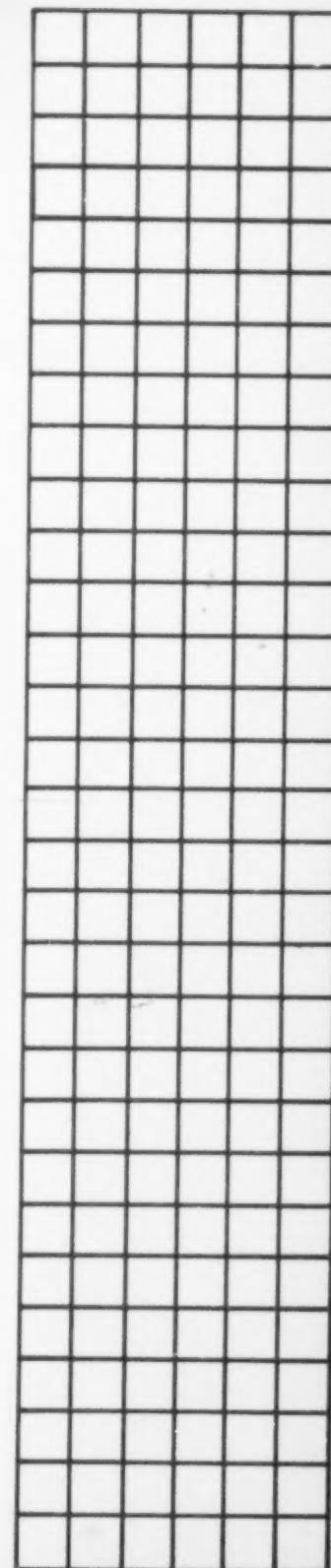
a. *Federal Register*, Vol. 51:182, Friday, September 19, 1986/Notices, List of Primary Care Health Manpower Shortage Areas Designated under Section 332 of the Public Health Service Act.

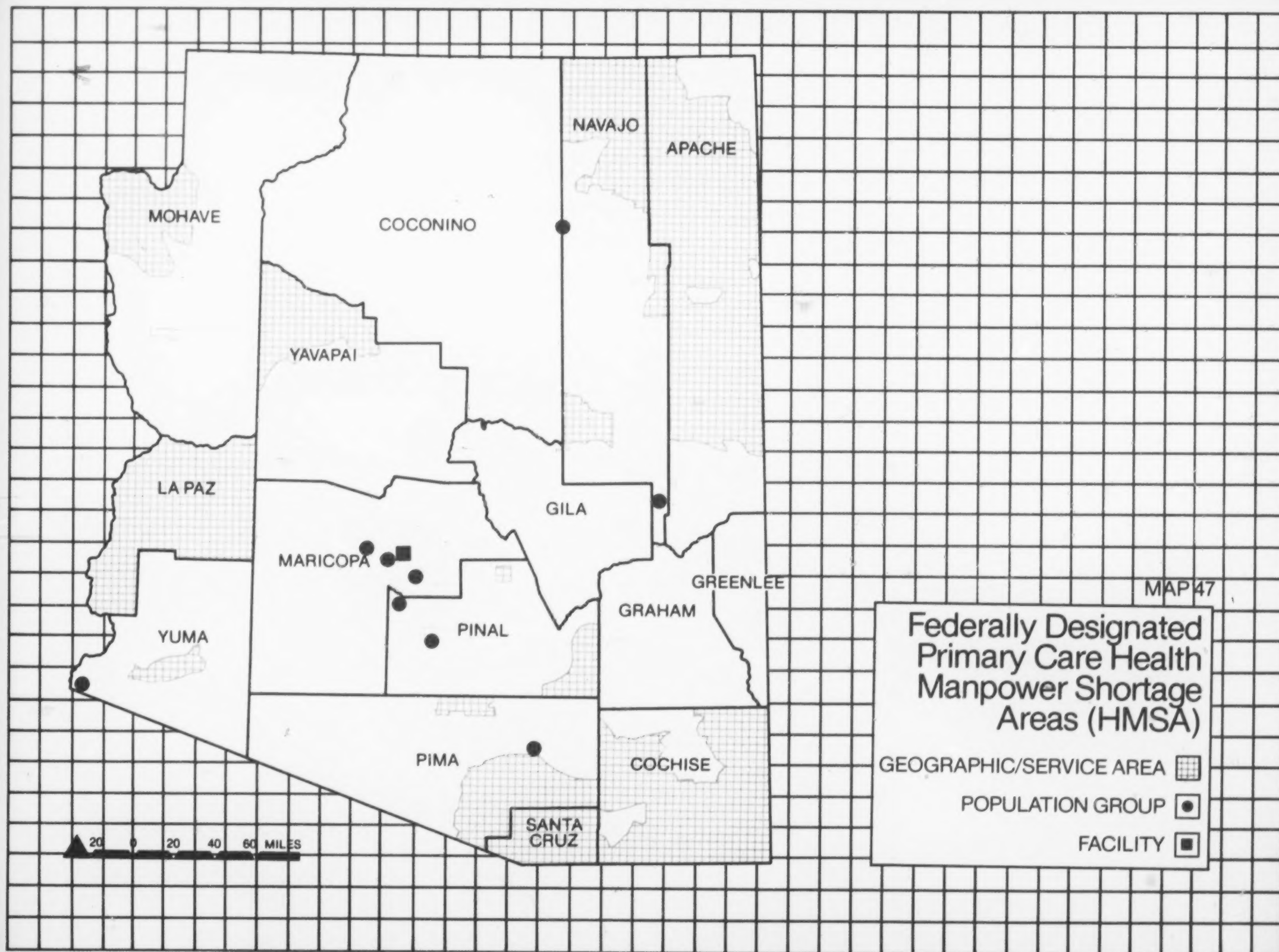
b. Health Manpower Shortage Area Data Base, Region IX, Primary Medical Care, tabulated, January 7, 1987.

c. Table developed by the University of Arizona, Rural Health Office, Phoenix Satellite, June 22, 1987.

Note: Native Americans as a population receive an "automatic" designation at the 04 degree of shortage* (See *Federal Register*, Vol. 45:223, Monday, November 17, 1980).

In order to acquire physicians or other health personnel from the NHSC, Indian reservations also need to be designated as a 01 or 02 degree of shortage. Some have a double designation as on parts of the Navajo Reservation.





National Health Service Corps (NHSC)

For 15 years, the National Health Service Corps of the United States Public Health Service has recruited physicians and dentists by handing out medical school scholarships in return for student obligations to accept assignments to remote rural towns and inner-city neighborhoods. The length of their service obligations are based on the amount of their scholarship loans. The terms can range from 1 to 4 years.

NHSC programs provide health care personnel under 3 categories: federal employees receiving a federal paycheck (FED); employees paid by a health center or facility under a

contract as a Private Practice Assignment (PPA); or as a private medical practitioner generating salary and practice expenses from patient revenues as a Private Practice Option (PPO). All categories of NHSC providers must fulfill their service obligations in HMSA designated areas.

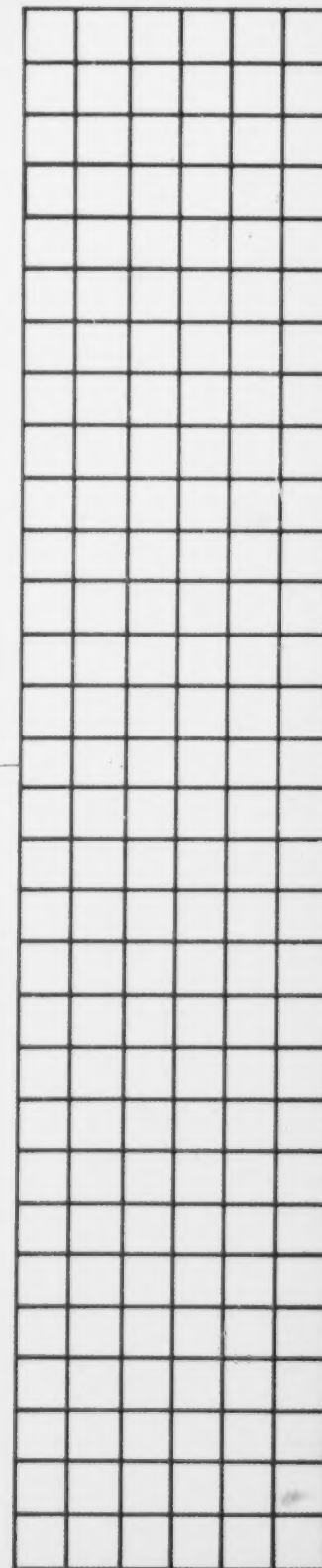
As of September, 1987, Arizona had a total of 29 NHSC primary care providers. Of the 29, 17 (or 59% of them) were practicing in a community-based health center. The remaining 12 were in the following locations: 4 were in Phoenix with the Maricopa County Health Department Correctional Health Service; 3 were in Parker in pri-

vate practice; and 1 each were in Whiteriver/Tuba City, a hospital clinic in Nogales, a county clinic in Guadalupe and in private practices in Douglas and south Phoenix.

In addition to the primary care NHSC providers noted, 2 psychiatrists were fulfilling NHSC obligations. One was in Flagstaff and the other in Nogales.

The number of physicians involved in NHSC has dwindled in recent years in Arizona, and nationally, due to severe cut-backs in the number of available scholarships. There were only 35 scholarships granted last year, compared to the late 1970s

when more than 2,000 scholarships were given out annually (*Wall Street Journal*, 6-23-87, p. 33). While numbers are dwindling, it's important to note that the NHSC stills plays an important role in providing health care in underserved urban and rural areas. They are a major link in the rural health care chain.



Federally Designated Medically Underserved Areas (MUA)

Four basic elements are considered for an MUA designation: the percentage of population in poverty; the percentage of population 65 years old or older; the infant mortality rate over a 5-year period; and the physician-to-population ratio.

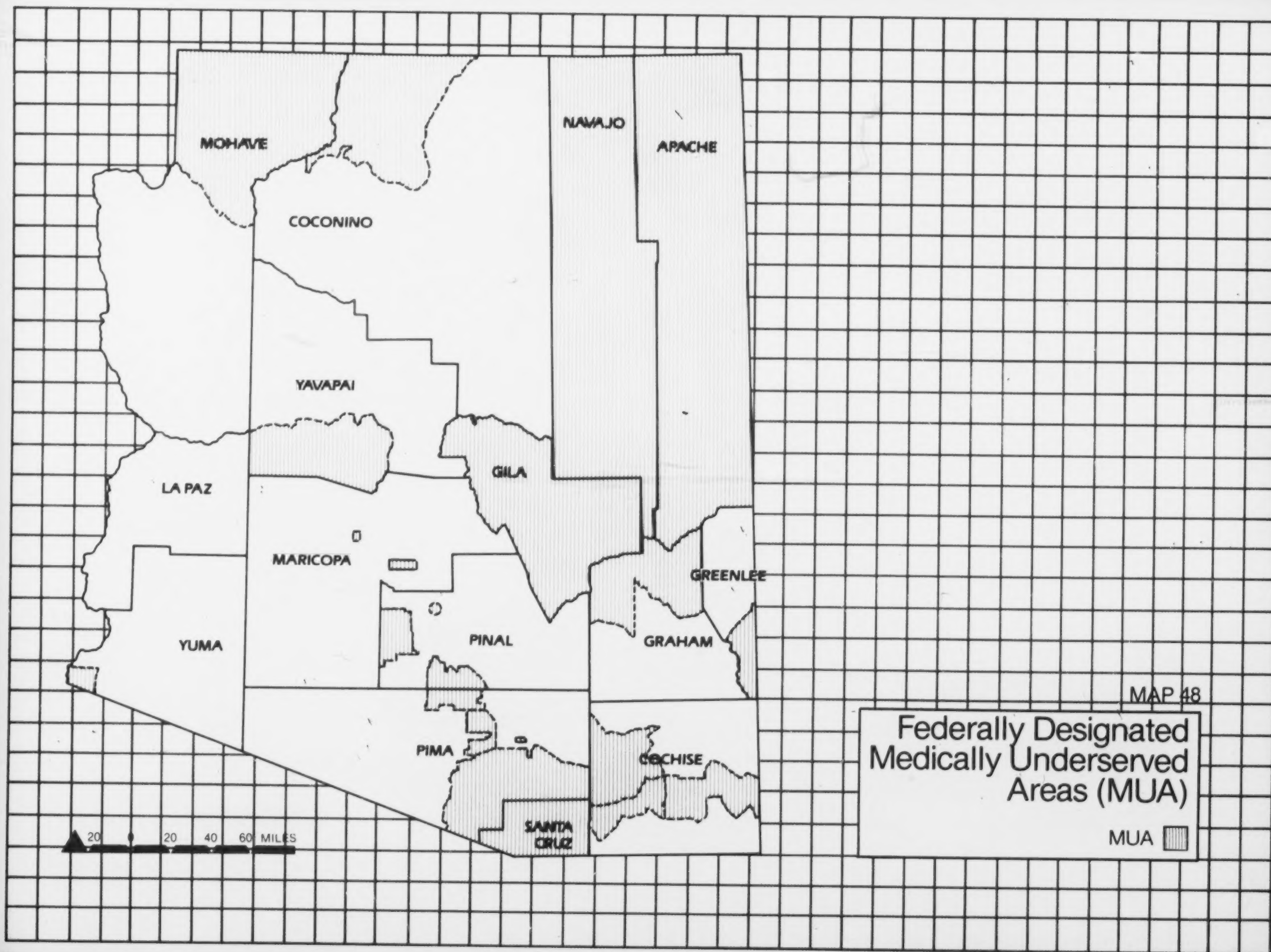
Other factors considered are the population's inability to access existing services because of geographic and economic barriers or a special population's particular needs based on ethnic, socio-economic or migratory nature of occupation. Arizona, currently has 21 areas designated as MUAs.

TABLE 62

FEDERAL MUAs

County	Designated Area Name	Location
Apache	Apache	Apache County
Cochise	Benson	Benson CCD
	Elfrida	Elfrida CCD
	Tombstone	Tombstone CCD
Coconino	Kaibab	Kaibab CCD
Gila	Gila	Gila County
Graham	San Carlos	San Carlos CCD
Greenlee	Duncan	Duncan CCD
Maricopa	El Mirage	ED's: 0608-0609, 0716
	South Phoenix	CT's: 1128, 1131, 1140, 1152-1165
Mohave	Mohave North	Mohave North CCD
Navajo	Navajo	Navajo County
Pima	Arivaca	CT's: 0041.02, 0043.3, 0043.05
	Continental	
	Green Valley	
	Three Points	
	Marana	CT: 0044.05
	South Tucson	CT's: 0001-0005, 0008-0012, 0014, 0020-0024, 0038-0039
Pinal	Eloy	Eloy CCD
	Maricopa-Stanfield	Maricopa-Stanfield CCD
	Sacaton	ED: 0021
Santa Cruz	Santa Cruz	Santa Cruz County
Yavapai	Congress	Congress CCD
Yuma	Somerton	CT's: 0114-0116

Source: Rural Health Office (Phoenix Satellite), University of Arizona, June, 1987.



Appendices

Appendix 1

Summary of Ratios

This table summarizes the distribution of various health providers in Arizona. Ratios per 100,000 people were used, rather than absolute counts, to assist in

designating areas where there may be an inadequate supply of personnel.

Availability and accessibility of services generally are mea-

sured by a service to population ratio in a defined geographic area. This standardized method allows meaningful comparison between regions and calcula-

tion of need and unmet need, relative to population size and distance to service.

SUMMARY OF HEALTH PROVIDER RATIOS PER 100,000 POPULATION BY COUNTY

	Chiro- practors	Dental Hygienists	Dentists	Dieti- tians	EMT Basic	Nurses LPN	Nurse Pract. NP	Nurses RN	Opto- metrists	Pharm- acists
Counties Without an SMSA										
Apache	3	5	19	5	216	72	19	253	3	18
Cochise	14	9	28	10	184	219	12	475	9	45
Coconino	29	47	60	21	418	88	26	605	11	53
Gila	12	12	22	10	262	194	10	569	5	47
Graham	20	28	49	4	267	133	16	381	12	44
Greenlee	0	0	10	0	302	94	0	250	10	42
La Paz	7	0	14	14	218	162	0	232	0	28
Mohave	34	11	43	9	332	243	6	472	11	58
Navajo	16	7	33	8	215	129	14	330	7	34
Pinal	17	10	20	9	173	256	5	427	6	40
Santa Cruz	3	0	10	3	274	99	10	236	3	38
Yavapai	43	18	50	19	280	221	12	764	9	73
Yuma	13	10	38	11	171	260	6	514	8	54
	20	14	35	11	250	186	12	477	8	47
Counties With an SMSA										
Maricopa	31	35	58	19	126	230	13	840	10	74
Pima	17	28	58	25	151	261	22	880	10	90
	27	33	58	21	133	238	15	850	10	78
Arizona Ratio =	26	29	52	19	160	226	14	762	9	70
U.S. Ratio =	17†	31‡	57*	23†	138†	173‡	7.25*	629*	11‡	68**

* U.S. Department of Commerce, Bureau of Census, 1987 Statistical Abstract of the United States, 107th Edition.

** U.S. Department of Health and Human Services, *Health, United States 1985*.

† Interviews with State Boards, State Associations or National Boards.

‡ *Arizona Rural Health Provider Atlas, 1984*.

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SUMMARY OF HEALTH PROVIDER RATIOS PER 100,000 POPULATION BY COUNTY

	Phys. Therap.	Phys. Assts.	Phys. DO	Phys. IHS	Phys. MD	Primary Care Phys.	Podia- trists	Psych- ologists	Radio. Tech
Counties Without an SMSA									
Apache	3	5	2	102	48	30	0	2	16
Cochise	9	9	16	0	70	51	1	9	35
Coconino	35	4	6	110	114	54	4	33	42
Gila	15	0	10	138	85	57	0	7	40
Graham	4	49	0	0	40	32	0	4	32
Greenlee	0	10	10	0	21	31	0	0	0
La Paz	7	14	49	258	35	49	0	7	49
Mohave	9	9	9	68	97	50	4	5	58
Navajo	4	12	3	118	51	29	0	3	13
Pinal	6	6	6	71	58	38	0	5	22
Santa Cruz	10	0	0	0	62	44	3	0	24
Yavapai	15	5	7	0	121	57	3	17	42
Yuma	11	6	8	309	115	59	1	10	39
	11	8	8	108	82	47	2	10	34
Counties With an SMSA									
Maricopa	25	6	20	215	180	82	5	25	60
Pima	27	3	16	81	222	89	5	35	65
	25	6	19	162	190	84	5	27	61
Arizona Ratio =	22	6	16	121	165	75	4	23	55
U.S. Ratio =	34†	9.5†	7.6**	N/A	190*	73.4‡	4.4**	28†	65†

APPENDIX 2

Holistic Health

The holistic approach to health care is an alternative to conventional medicine, encompassing a wide variety of natural healing techniques.

Holistic health providers attempt to address the health needs of the whole person. To many they represent an attractive, more personalized style of health care that departs from the increasingly specialized medical care system and its "im-personal" technological emphasis.¹

Holistic methods emphasize strengthening natural lifestyles and immune systems, body cleansing and detoxification, natural and herbal therapy and self-actuated care.² Treatments are generally non-invasive and are limited to natural substances and techniques. See glossary for other holistic health terms.³

In recent years, there has been a trend towards more holistic approaches among primary care providers of all disciplines. This is reflected by the widespread general interest in health maintenance, diet, exercise and stress reduction.

Among Arizona's Indian population, folk healers, such as medicine men and herbalists, have long enjoyed reputable and popular practices. The cur-

anderos, or healers, are also well known to the Hispanic and Indian cultures of Arizona. They employ a wide range of holistic techniques specially tailored to the individual patient in curing mental and physical ailments.

Licensed Practitioners

Practitioners claiming to be holistic include chiropractors, homeopaths and naturopaths. Chiropractors, who are licensed in every state, are the nation's chief holistic primary care providers. In Arizona, chiropractors are joined by homeopaths (DOs and MDs) and naturopaths. State examiner boards test, license and regulate practitioners in the 3 respective professions.

Of the 16 licensed homeopaths in the state, only 2 (1 in Yavapai County and 1 in Coconino County) are located outside of Maricopa County. See the write up on homeopaths in the primary care physician section for further information.

Naturopaths do not have to be MDs, but they can be. They are licensed by the Arizona Naturopathic Physicians Board of Examiners. Only 8 other states certify or license naturopaths.⁴ Of the 74 practitioners licensed in Arizona in

1987, 16 (22%) are located in 7 of the state's rural counties.

To be licensed in Arizona, naturopaths need to complete post-graduate work at 1 of 2 accredited naturopathic colleges located in Seattle, Washington, and Portland, Oregon. They receive training similar to a primary care physician stressing techniques that are non-invasive in nature.

Naturopaths take from all healing traditions and the variations of treatment can be as diverse as the number of care providers. However, they can perform only minor surgery and for the most part the treatment is drugless.⁵

There is very little information available on holistic care providers outside of the licensed holistic physicians. Informal attempts are being made within the fields to establish information networks and professional guidelines for standardized practice.

In the rural areas, holistic care providers are expected to continue as viable alternatives to Arizona's medical care system. This is due in part to popular treatment trends and preferences and the scarcity of medical providers and services in some rural areas and on some Indian reservations.

Bliss, Berkeley Holistic Health Center, *The New Holistic Health Handbook: Living Well In A New Age*, The Stephen Greene Press, Lexington, Massachusetts, 1985.

² Ingles and West, *The Alternative Health Guide*, Alfred Knopf, New York, 1983.

³ Hastings, Fadiman, and Gordon, *The Complete Guide to Holistic Medicine, Health for the Whole Person*, Westview Press, Boulder, Colorado, 1980.

⁴ Interview with Patty Waldrop, administrative secretary of the State Board of Naturopathic Physician Examiners, and Konrad Kail, naturopathic physician and physician assistant, June 15 and 18, 1987.

⁵ Interview with Dennis Claypool, member of the Arizona State Board of Naturopathic Physicians Examiners, July 30, 1987.

Holistic Health

Holistic Health Glossary

This is a limited glossary of terms and techniques recognized by holistic health practitioners:

<i>Acupuncture:</i>	An Oriental therapy involving insertion of small needles into the skin at strategic points to eliminate or reduce pain or improve body function.	<i>Rebirthing:</i>	A technique that uses the control of breathing and meditation to remove energy "blocks" and refocus the life force.
<i>Acupressure:</i>	An Oriental therapy involving finger pressure at body points to relieve pain. Akin to Shiatsu.	<i>Reflexology:</i>	A technique of foot manipulation and massage at specific points, corresponding to areas of the body, to restore normal circulation, eliminate wastes and improve functions.
<i>Biorhythms:</i>	A technique for stress reduction and activity planning based on natural energy cycles affecting a person's physical, emotional and intellectual patterns.	<i>Rolfing:</i>	A strenuous "body work" technique using deep manipulation and massage of muscle and connective tissue to realign the physical structures and restore physical balance.
<i>Biofeedback:</i>	Sensory feedback training and control for stress reduction and relaxation based on the body's stress and biological changes.	<i>Shiatsu:</i>	A Japanese technique of finger pressure therapy involving stimulation of energy through acupressure at physical points associated with vital organ and system functions.
<i>Chiropractic:</i>	See Chiropractor section.	<i>The Alexander Technique:</i>	A physical therapy aimed at postural changes to prevent and treat a variety of disorders and physical limitations.
<i>Hypnotherapy:</i>	A technique which alters the state of consciousness to induce relaxation to change behavior, reduce stress and relieve pain.	<i>The Feldenkrais Technique:</i>	A system of body movement and retraining based on physical movement, energy flow and natural muscular function to achieve balance, efficient patterns of movement and physical/mental reprogramming.
<i>Iridology:</i>	A diagnostic technique for identifying areas of physical dysfunction or damage by reading indicators in the iris of the eye.	<i>Trager:</i>	A system of gentle movement therapy designed to improve muscle function, relieve stress and alleviate pain associated with poor posture or physical injury.
<i>Jin Shin Jyutsu:</i>	An Oriental discipline using pressure to certain physical areas to reduce stress, relieve pain and improve health.		
<i>Naturopathic Medicine:</i>	See discussion in holistic health care section.		
<i>Homeopathic Medicine:</i>	See discussion in Primary Care Physician section. Homeopaths are M.D.s or D.O.s.		

